

=> file reg

FILE 'REGISTRY' ENTERED AT 13:07:26 ON 31 JUL 2003  
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=> display history full l1-

FILE 'LREGISTRY' ENTERED AT 11:22:05 ON 31 JUL 2003

L1 STR  
L2 STR L1  
L3 STR

FILE 'REGISTRY' ENTERED AT 11:39:19 ON 31 JUL 2003

L4 SCR 2043  
L5 50 SEA SSS SAM (L1 OR L2) AND L4  
L6 117801 SEA C2H4O OR C3H6O  
L7 50 S (L1 OR L2) AND L4 SSS SAM SUB=L6  
L8 14232 SEA SUB=L6 SSS FUL (L1 OR L2) AND L4  
SAV TEM L8 YUA086/A  
L9 50 SEA SUB=L8 SSS SAM L3  
L10 3999 S L3 SSS FUL SUB=L8  
SAV L10 YUA086A/A  
L11 1073 SEA L8 AND 1/NC  
L12 2102 SEA L8 AND 2/NC  
L13 14232 SEA L8 AND C H O/ELF  
L14 1073 SEA L11 AND L13  
L15 4587 SEA L8 AND 3/ELC.SUB  
L16 574 SEA L11 AND L15  
L17 1024 SEA L15 AND L12  
L18 172 SEA L10 AND 2/NC AND 3/ELC.SUB

FILE 'HCA' ENTERED AT 12:07:51 ON 31 JUL 2003

L19 5208 SEA L16  
L20 347 S L18  
L21 183516 SEA BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY?  
OR GALVANI? OR WET OR DRY OR PRIMARY OR SECONDARY) (2A) (CE  
LL OR CELLS) OR WETCELL? OR DRYCELL?  
L22 QUE ELECTROD## OR CATHOD## OR ANOD##  
L23 178517 SEA BINDER? OR BONDER?  
L24 QUE LITHIUM# OR LITHIAT? OR LI  
L25 295 SEA L19 AND L21  
L26 187 SEA L25 AND L22  
L27 177 SEA L26 AND L24  
L28 22 SEA L27 AND L23  
SEL L28 1-22 RN

FILE 'REGISTRY' ENTERED AT 12:12:19 ON 31 JUL 2003

L29 115 SEA (26570-48-9/BI OR 12190-79-3/BI OR 32171-39-4/BI OR

FILE 'HCA' ENTERED AT 12:13:38 ON 31 JUL 2003  
SEL L28 1-22 HIT RN

L30 FILE 'REGISTRY' ENTERED AT 12:13:47 ON 31 JUL 2003  
10 SEA (26570-48-9/BI OR 32171-39-4/BI OR 25852-47-5/BI OR

L31 FILE 'LREGISTRY' ENTERED AT 12:20:03 ON 31 JUL 2003  
L32 STR L1  
STR L31

L33 FILE 'REGISTRY' ENTERED AT 12:25:24 ON 31 JUL 2003  
L34 4 SEA SUB=L8 SSS SAM (L31 OR L32)  
133 SEA SUB=L8 SSS FUL (L31 OR L32)  
SAV L34 YUA086B/A  
L35 17 SEA L34 AND L11  
L36 35 SEA L34 AND L12  
L37 4 SEA L36 AND L10  
L38 29 SEA L34 AND C2H4O  
L39 STR L32  
L40 50 SEA SUB=L8 SSS SAM (L31 OR L39)  
L41 5434 SEA SUB=L8 SSS FUL (L31 OR L39)  
SAV L41 YUA086B/A  
L42 86 SEA L41 AND 1/NC AND 3/ELC.SUB  
L43 382 SEA L41 AND 2/NC AND 3/ELC.SUB  
L44 92 SEA L43 AND L10

L45 FILE 'HCA' ENTERED AT 12:40:25 ON 31 JUL 2003  
L46 916 SEA L42  
L47 179 SEA L44  
L48 91 SEA L45 AND L21  
L49 70 SEA L45 AND L22  
L50 55 SEA L45 AND L23  
L51 125 SEA L45 AND L24  
L52 9 SEA L47 AND L48 AND L49 AND L50  
L53 16 SEA L46 AND L21  
L54 12 SEA L46 AND L22  
L55 5 SEA L46 AND L23  
L56 27 SEA L46 AND L24  
L57 1 SEA L52 AND L53 AND L54 AND L55  
L58 8 SEA L52 AND L53 AND L55  
L59 8 SEA L52 AND L53  
L60 15 SEA L52 AND (L53 OR L54 OR L55)  
L61 86 SEA L45 AND L21 AND (L22 OR L23 OR L24)  
50 SEA L45 AND L21 AND L22 AND L24

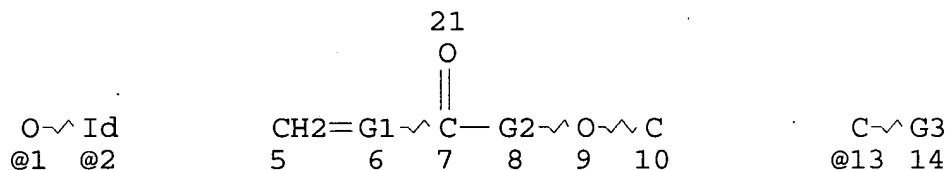
L62 FILE 'LCA' ENTERED AT 12:51:21 ON 31 JUL 2003  
5976 SEA (ADHESI? OR ADHERE? OR STICK? OR CLING? OR BOND? OR  
CEMENT? OR CONGLUTIN? OR AGGLUTIN? OR MUCILAG? OR TACK?  
OR GLUE? OR GLUING# OR PASTE? OR PASTING# OR GUM? OR  
HOLD? OR GRIP? OR GRASP? OR BIND?)/BI,AB

FILE 'HCA' ENTERED AT 12:52:18 ON 31 JUL 2003

L63 12 SEA L61 AND L62  
 L64 16 SEA L51 OR L56 OR L57  
 L65 10 SEA (L59 OR L63) NOT L64  
 L66 38 SEA L61 NOT (L64 OR L65)  
 L67 1195583 SEA (SUSPEN? OR DISPERS? OR COLLOID? OR EMULS? OR  
 MICROEMULS? OR SLURR?)/BI,AB  
 L68 2 SEA L66 AND L67  
 L69 36 SEA L66 NOT L68  
 L70 32 SEA L69 AND P/DT  
 L71 28 SEA L70 AND (1907-1999/PY OR 1907-1999/PY)

=&gt; d l10 que stat

L1 STR



VAR G1=CH/13

REP G2=(1-10) 1-7 2-9

VAR G3=X/ME/ET/N-PR/I-PR/N-BU/I-BU/S-BU/T-BU

NODE ATTRIBUTES:

NSPEC IS RC AT 10

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

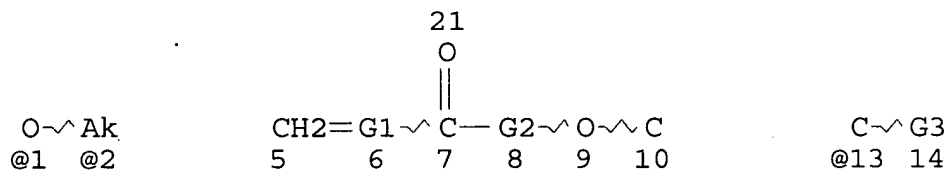
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L2 STR



VAR G1=CH/13

REP G2=(1-10) 1-7 2-9

VAR G3=X/ME/ET/N-PR/I-PR/N-BU/I-BU/S-BU/T-BU

NODE ATTRIBUTES:

NSPEC IS RC AT 10

CONNECT IS E2 RC AT 2

DEFAULT MLEVEL IS ATOM

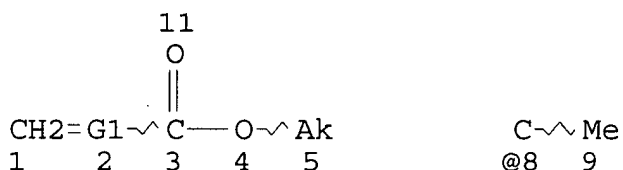
GGCAT IS SAT AT 2

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS M2-X3 C AT 2

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE  
L3 STR



VAR G1=CH/8  
NODE ATTRIBUTES:  
CONNECT IS E1 RC AT 5  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED  
ECOUNT IS M1-X20 C AT 5

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE  
L4 SCR 2043  
L6 117801 SEA FILE=REGISTRY C2H4O OR C3H6O  
L8 14232 SEA FILE=REGISTRY SUB=L6 SSS FUL (L1 OR L2) AND L4  
L10 3999 SEA FILE=REGISTRY SUB=L8 SSS FUL L3

100.0% PROCESSED 14232 ITERATIONS 3999 ANSWERS  
SEARCH TIME: 00.00.01

=> file hca  
FILE 'HCA' ENTERED AT 13:08:31 ON 31 JUL 2003  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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=> d l64 1-16 cbib abs hitstr hitind

L64 ANSWER 1 OF 16 HCA COPYRIGHT 2003 ACS on STN  
137:219424 Block copolymer electrolytes synthesized by atom transfer radical polymerization for solid-state, thin-film **lithium batteries**. Trapa, Patrick E.; Huang, Biying; Won, You-Yeon; Sadoway, Donald R.; Mayes, Anne M. (Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge,

MA, 02139-4307, USA). Electrochemical and Solid-State Letters, 5(5), A85-A88 (English) 2002. CODEN: ESLEF6. ISSN: 1099-0062. Publisher: Electrochemical Society.

AB Block copolymer electrolytes of poly[(oxyethylene)<sub>9</sub> Me ether methacrylate]-b-poly(Bu methacrylate) (POEM-b-PBMA) (60:40 by mass) synthesized for by atom transfer radical polymn. (ATRP) exhibited mech. and elec. properties indistinguishable from those of materials made by the more difficult anionic polymn. method. ATRP offers distinct processing advantages as it is easily scalable and almost solvent-free. Solid-state, thin-film **batteries** comprised of a metallic **lithium anode**, a **binder**-free, additive-free, fully dense vanadium oxide **cathode**, and an electrolyte of ATRP-synthesized POEM-b-PBMA (60:40) doped with LiCF<sub>3</sub>SO<sub>3</sub> demonstrate resistance to capacity fade during extended cycling at a discharge rate of C/2, and perform comparably to otherwise identical **batteries** operated with the liq. electrolyte 1 M LiPF<sub>6</sub> in ethylene carbonate:dimethyl carbonate (1:1 by mass).

IT **189832-78-8P**, 2-Propenoic acid, 2-methyl-, butyl ester, polymer with ..alpha..-(2-methyl-1-oxo-2-propenyl)-..omega...methoxypoly(oxy-1,2-ethaned iyl), block  
(block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)

RN 189832-78-8 HCA

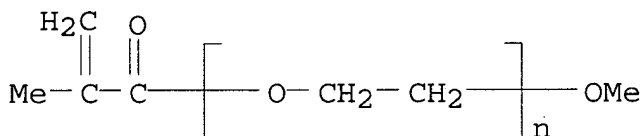
CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with .alpha..-(2-methyl-1-oxo-2-propenyl)-.omega...methoxypoly(oxy-1,2-ethaned iyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2

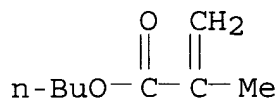
CCI PMS



CM 2

CRN 97-88-1

CMF C8 H14 O2



IT **189832-78-8DP**, 2-Propenoic acid, 2-methyl-, butyl ester, polymer with ..alpha..-(2-methyl-1-oxo-2-propenyl)-..omega...methoxypoly(oxy-1,2-ethaned iyl), block, complex with **lithium** dopant

(block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)

RN 189832-78-8 HCA

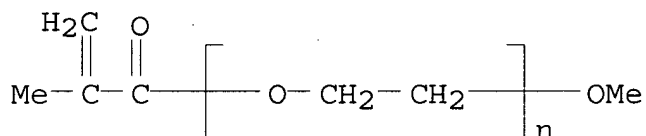
CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with .alpha..-(2-methyl-1-oxo-2-propenyl)-.omega...methoxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2

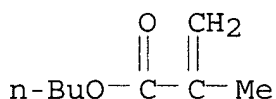
CCI PMS



CM 2

CRN 97-88-1

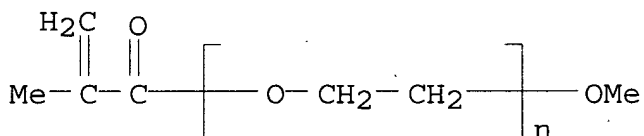
CMF C8 H14 O2



IT **26915-72-0**, Polyethylene glycol methyl ether methacrylate (block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)

RN 26915-72-0 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha..-(2-methyl-1-oxo-2-propenyl)-.omega...methoxy- (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 36

ST **battery** electrolyte **lithium** doped secondary

- block copolymer solid state; block graft oxyethylene butyl methacrylate copolymer triflate doping electrolyte; atom transfer radical polymn block graft oxyethylene butyl methacrylate
- IT Polymerization  
(atom transfer, radical; block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT Battery electrolytes  
(block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT Secondary batteries  
(**lithium**, thin-film; block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT Polymer morphology  
(microphase, of graft-block cast film; block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT Solid state secondary batteries  
(thin-film **lithium**; block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT 189832-78-8P, 2-Propenoic acid, 2-methyl-, butyl ester, polymer with ..alpha..-(2-methyl-1-oxo-2-propenyl)-..omega...methoxypoly(oxy-1,2-ethaned iyl), block  
(block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT 7439-93-2DP, **Lithium**, complex with polyethylene glycol monomethyl methacrylate-Bu methacrylate block copolymer 189832-78-8DP, 2-Propenoic acid, 2-methyl-, butyl ester, polymer with ..alpha..-(2-methyl-1-oxo-2-propenyl)-..omega...methoxypoly(oxy-1,2-ethaned iyl), block, complex with **lithium** dopant  
(block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT 26915-72-0, Polyethylene glycol methyl ether methacrylate  
(block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT 33454-82-9, **Lithium** Triflate  
(dopant; block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)
- IT 33454-82-9, **Lithium** Triflate  
(dopant; block copolymer electrolytes synthesized by atom transfer radical polymn. for solid-state, thin-film **lithium batteries**)

- 136:21969 Method of fabrication of an **electrode** structure for **battery** and electrical double-layer capacitor. Sato, Takaya; Shimizu, Tatsuo (Nisshinbo Industries, Inc., Japan; Itochu Corp.). Eur. Pat. Appl. EP 1160896 A2 20011205, 21 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-113010 20010528. PRIORITY: JP 2000-164947 20000601.
- AB It is an object of the invention to provide an **electrode** structure composed of a low resistance **electrode** film with good bonding properties on a current-collecting member surface. Hence, the invention relates to an **electrode** structure obtainable by coating a compd. mixt. comprising an **electrode** material, a **binder** and a solvent onto a current-collecting member, and by directing a warm breeze onto the compd. mixt. coating to vaporize the solvent and to form an **electrode** film on the current-collecting member. Also, a manufg. method for a **battery** and a double-layer capacitor using such an **electrode** structure are disclosed.
- IC ICM H01M004-04  
ICS H01G009-058
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 76
- ST **electrode** structure **battery** elec double layer capacitor
- IT Fluoropolymers, uses  
(**binder**; method of fabrication of **electrode** structure for **battery** and elec. double-layer capacitor)
- IT Capacitor **electrodes**  
(double layer; method of fabrication of **electrode** structure for **battery** and elec. double-layer capacitor)
- IT **Battery electrodes**  
(method of fabrication of **electrode** structure for **battery** and elec. double-layer capacitor)
- IT Carbon black, uses  
(method of fabrication of **electrode** structure for **battery** and elec. double-layer capacitor)
- IT 7440-44-0, Activated carbon, uses  
(activated; method of fabrication of **electrode** structure for **battery** and elec. double-layer capacitor)
- IT 9002-84-0, Teflon 24937-79-9, PvdF  
(**binder**; method of fabrication of **electrode** structure for **battery** and elec. double-layer capacitor)
- IT 116680-33-2, NC-IM  
(method of fabrication of **electrode** structure for **battery** and elec. double-layer capacitor)
- IT 12190-79-3, Cobalt **lithium** oxide colio2  
(method of fabrication of **electrode** structure for **battery** and elec. double-layer capacitor)
- IT 109-78-4, Ethylene cyanohydrin 110-63-4, 1,4-Butanediol, uses  
3290-92-4, Trimethylolpropanetrimethacrylate 9002-89-5D, Polyvinyl alcohol, cyanoethylated and dihydroxypropylated 9003-11-6,



Ethylene glycol-propylene glycol copolymer 26915-72-0,  
Methoxypolyethylene glycol methacrylate  
(method of fabrication of **electrode** structure for  
**battery** and elec. double-layer capacitor)

L64 ANSWER 3 OF 16 HCA COPYRIGHT 2003 ACS on STN

135:79428 A polymer **electrolyte**, a **battery**

**cell** comprising the **electrolyte** and a method of  
producing the electrolyte. Gavelin, Patrik; Wesslen, Bengt  
(Telefonaktiebolaget LM Ericsson, Swed.). PCT Int. Appl. WO  
2001046280 A1 20010628, 43 pp. DESIGNATED STATES: W: AE, AG, AL,  
AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE,  
DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,  
JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,  
MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,  
TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD,  
RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES,  
FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD,  
TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-SE2599  
20001220. PRIORITY: SE 1999-4667 19991220.

AB A polymer electrolyte with improved cond. and compatibility to  
**electrodes**, useful for secondary **batteries** of high  
energy d., comprises a polymer, a metal salt and possibly at least  
one plasticizer or solvent, wherein the polymer is an amphiphilic  
graft copolymer comprising a backbone carrying hydrophilic and  
hydrophobic grafts attached to different carbon atoms in the  
backbone, wherein the hydrophobic grafts are selected from the group  
of fluorinated chains or alkyl chains having at least 8 carbon  
atoms. Polymer gel electrolytes are manufd. by dissolving the salt  
in .gtoreq.1 first anhyd. solvent or plasticizer forming a first  
soln. and dissolving the amphiphilic graft polymer in the first  
soln. Solid polymer electrolytes are manufd. by dissolving the  
amphiphilic graft polymer in a solvent or plasticizer, mixing this  
soln. with the above-described first soln., and slowly evapg. the  
solvent. A typical amphiphilic polymer was manufd. by radical  
polymn. of polyethylene glycol monomethyl ether methacrylate 3.3, Me  
methacrylate 1.1, and 1H,1H,7H-dodecafluoroheptyl methacrylate 6.5  
g.

IT 347159-70-0P

(polymer electrolytes contg. amphiphilic graft copolymers for  
secondary **batteries** with high energy d.)

RN 347159-70-0 HCA

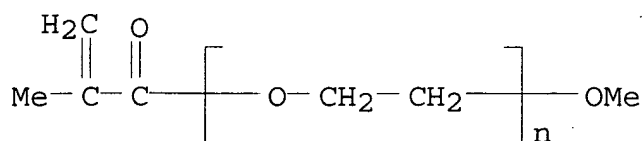
CN 2-Propenoic acid, 2-methyl-, hexadecyl ester, polymer with  
.alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-  
ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2

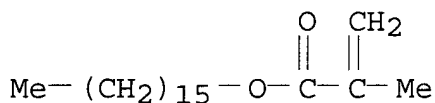
CCI PMS



CM 2

CRN 2495-27-4

CMF C20 H38 O2



- IC ICM C08F220-10  
ICS H01M006-14; H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 35
- ST polymer electrolyte amphiphilic acrylic secondary **battery**;  
fluoroheptyl methacrylate graft amphiphilic copolymer manuf;  
polyethylene glycol methyl ether methacrylate graft copolymer manuf;  
gel polymer electrolyte amphiphilic acrylic secondary  
**battery**
- IT Telephones  
(cellular; polymer electrolytes contg. amphiphilic graft  
copolymers for **batteries** for cellular phones)
- IT Gels  
(polymer electrolytes contg. amphiphilic graft copolymers for  
**batteries** for personal pagers)
- IT Amphiphiles  
Polymer electrolytes  
Secondary **batteries**  
(polymer electrolytes contg. amphiphilic graft copolymers for  
secondary **batteries** with high energy d.)
- IT Computers  
(portable; polymer electrolytes contg. amphiphilic graft  
copolymers for **batteries** for portable computers)
- IT Communication  
(telecommunication, app., personal pagers; polymer electrolytes  
contg. amphiphilic graft copolymers for **batteries** for  
personal pagers)
- IT 345306-86-7P 345307-03-1P 347159-67-5P **347159-70-0P**  
347852-01-1P 347852-03-3P  
(polymer electrolytes contg. amphiphilic graft copolymers for  
secondary **batteries** with high energy d.)
- IT 21324-40-3, **Lithium** hexafluorophosphate 90076-65-6,  
**Lithium** bis(trifluoromethylsulfonyl)imide  
(polymer electrolytes contg. amphiphilic graft copolymers for  
secondary **batteries** with high energy d.)

IT 7791-03-9, **Lithium** perchlorate 14283-07-9,  
**Lithium** tetrafluoroborate 29935-35-1, **Lithium**  
 hexafluoroarsenate 33454-82-9, **Lithium**  
 trifluoromethanesulfonate 131651-65-5, **Lithium**  
 perfluorobutanesulfonate 347159-73-3  
 (polymer electrolytes contg. amphiphilic graft copolymers for  
 secondary **batteries** with high energy d.)

L64 ANSWER 4 OF 16 HCA COPYRIGHT 2003 ACS on STN  
 135:21880 Novel **lithium**-ion conducting gels with a tailor-made  
 concentration gradient and their use in secondary **lithium**  
 metal **batteries**. Hikmet, Rifat R. M.; Michels, Ilse  
 (Philips Research, Eindhoven, NL-5656 AA, Neth.). Advanced  
 Materials (Weinheim, Germany), 13(5), 338-341 (English) 2001.  
 CODEN: ADVMEW. ISSN: 0935-9648. Publisher: Wiley-VCH Verlag GmbH.

AB **Lithium**-ion conducting gels with a tailor-made concn.  
 gradient for use in secondary **lithium** metal  
**batteries** is obtained by mixing dodecyl diacrylate,  
 polyethylene glycol diacrylate, a 10% soln. of **lithium**  
 perchlorate, and propylene carbonate. Polymn. is initiated by UV  
 radiation (Irgacure 651 photoinitiator). This gel electrolyte is  
 evaluated in a **battery** with a **lithium** cobaltate  
**cathode**.

IT 129622-01-1  
 (**lithium**-ion conducting gels with a tailor-made concn.  
 gradient and their use in secondary **lithium** metal  
**batteries**)

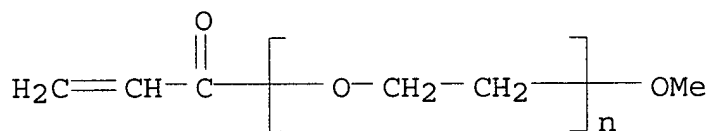
RN 129622-01-1 HCA  
 CN 2-Propenoic acid, dodecyl ester, polymer with .alpha.-(1-oxo-2-  
 propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA  
 INDEX NAME)

CM 1

CRN 32171-39-4

CMF (C2 H4 O)n C4 H6 O2

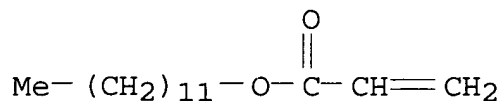
CCI PMS



CM 2

CRN 2156-97-0

CMF C15 H28 O2



- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 72
- ST **lithium** metal secondary **battery** gel electrolyte;  
dodecyl polyethylene glycol diacrylate polymer gel
- IT **Battery** electrolytes  
Ionic conductivity  
(**lithium**-ion conducting gels with a tailor-made concn.  
gradient and their use in secondary **lithium** metal  
**batteries**)
- IT Secondary **batteries**  
(**lithium**; **lithium**-ion conducting gels with a  
tailor-made concn. gradient and their use in secondary  
**lithium** metal **batteries**)
- IT Polymerization  
(photopolymer.; **lithium**-ion conducting gels with a  
tailor-made concn. gradient and their use in secondary  
**lithium** metal **batteries**)
- IT 7791-03-9, Perchloric acid, **lithium** salt  
129622-01-1  
(**lithium**-ion conducting gels with a tailor-made concn.  
gradient and their use in secondary **lithium** metal  
**batteries**)
- IT 7791-03-9, Perchloric acid, **lithium** salt  
129622-01-1  
(**lithium**-ion conducting gels with a tailor-made concn.  
gradient and their use in secondary **lithium** metal  
**batteries**)
- L64 ANSWER 5 OF 16 HCA COPYRIGHT 2003 ACS on STN  
128:310518 Polymer electrolyte, intercalation compounds, and  
**electrodes** for **batteries**. Mayes, Anne M.; Ceder,  
Gerbrand; Chiang, Yet-Ming; Sadoway, Donald R.; Aydinol, Mehmet K.;  
Soo, Philip P.; Jang, Young-Il; Huang, Biying (Massachusetts  
Institute of Technology, USA; Mayes, Anne M.; Ceder, Gerbrand;  
Chiang, Yet-Ming; Sadoway, Donald R.; Aydinol, Mehmet K.; Soo,  
Philip P.; Jang, Young-Il; Huang, Biying). PCT Int. Appl. WO  
9816960 A2 19980423, 79 pp. DESIGNATED STATES: W: AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB,  
GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG,  
SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE,  
DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE,  
SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO  
1997-US18839 19971010. PRIORITY: US 1996-28342 19961011; US  
1996-28341 19961011; US 1996-28278 19961011; US 1997-53876 19970728.

AB A block copolymeric electrolyte is noncrosslinked and nonglassy through the entire range of typical **battery** service temps., i.e., through the entire range of .ltorsim.70.degree.. The chains of the copolymer include .gtoreq.1 ionically conductive block and .gtoreq.1 2nd block immiscible with the ionically conductive block. The chains form an amorphous assocn. and are arranged in an ordered nanostructure including a continuous matrix of amorphous ionically conductive domains and amorphous 2nd domains that are immiscible with the ionically conductive domains. A compd.  $\text{Li}_p\text{M}_q\text{M}_1\text{rO}_2$  is provided, where M and M1 are each metal atoms or a main group elements; and p, q, and r are each nos. from .apprx.0 to .apprx.1; and q and r are chosen such that a formal charge on the  $\text{M}_q\text{M}_1\text{r}$  portion of the compd. is  $(4 - p)$ . In certain embodiments, these compds. are used in the **cathodes** of secondary **batteries**. The invention also includes methods of predicting the potential utility of metal dichalcogenide compds. for use in Li intercalation compds. The invention also provides methods for processing Li intercalation oxides with the structure and compositional homogeneity necessary to realize the increased formation energies of these compds. A part is made of a dimensionally stable, interpenetrating microstructure of a 1st phase including a 1st component and a 2nd phase, immiscible with the 1st phase, including a 2nd component. The 1st and 2nd phases define interphase boundaries, and .gtoreq.1 particle is positioned between a 1st and a 2nd phase at an interphase boundary. When the 1st and 2nd phases are electronically conductive and ionically conductive polymers, resp., and the particles are ion host particles, the arrangement is an **electrode** of a **battery**.

IT 74418-73-8DP, lithium complexes  
(**battery** electrolyte)

RN 74418-73-8 HCA

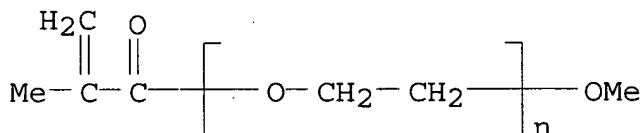
CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

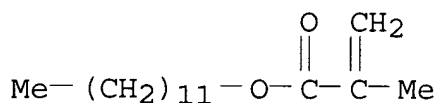
CCI PMS



CM 2

CRN 142-90-5

CMF C16 H30 O2



- IC ICM H01M006-00
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 37, 38, 49
- ST polymer electrolyte intercalation compd **battery electrode**
- IT Interpenetrating polymer networks  
(**battery electrolyte**)
- IT Polyacetylenes, uses  
Polyanilines  
Polyphenyls  
(**battery electrolyte**)
- IT **Battery electrolytes**  
(block copolymers for)
- IT Secondary **batteries**  
(components for polymer-electrolyte)
- IT **Battery cathodes**  
(intercalated oxides for)
- IT Poly(arylenealkenylenes)  
(interpenetrating networks; **battery electrolyte**)
- IT 12190-79-3P, Cobalt **lithium** oxide (CoLiO<sub>2</sub>) 191665-64-2P,  
Aluminum cobalt **lithium** oxide (Al<sub>0.25</sub>Co<sub>0.75</sub>LiO<sub>2</sub>)  
199923-78-9P, Aluminum cobalt **lithium** oxide  
(Al<sub>0.5</sub>Co<sub>0.5</sub>LiO<sub>2</sub>) 206552-66-1P, Aluminum cobalt **lithium**  
oxide (Al<sub>0.75</sub>Co<sub>0.25</sub>LiO<sub>2</sub>) 206552-67-2P, Aluminum **lithium**  
manganese oxide (Al<sub>0.25</sub>LiMn<sub>0.75</sub>O<sub>2</sub>)  
(**battery cathodes**)
- IT 7439-93-2DP, **Lithium**, polymer complexes, uses  
26009-24-5P, Poly(p-phenylenevinylene) 74418-73-8DP,  
**lithium** complexes 172701-24-5DP, **lithium**  
complexes  
(**battery electrolyte**)
- IT 25067-58-7, Polyacetylene 25190-62-9, Poly(p-phenylene)  
25233-30-1, Polyaniline 25233-30-1D, Polyaniline, sulfonated  
25233-34-5, Polythiophene 25768-71-2, trans-Polyacetylene  
30604-81-0, Polypyrrole  
(**battery electrolyte**)
- IT 12003-67-7, Aluminum **lithium** oxide (AlLiO<sub>2</sub>) 12057-19-1,  
**Lithium** titanium oxide (LiTiO<sub>2</sub>) 12162-87-7,  
**Lithium** vanadium oxide (LiVO<sub>2</sub>) 191847-21-9,  
**Lithium** zinc oxide (LiZnO<sub>2</sub>) 206552-68-3, Aluminum  
**lithium** titanium oxide (Al<sub>0.67</sub>LiTi<sub>0.33</sub>O<sub>2</sub>) 206552-69-4,  
Aluminum **lithium** titanium oxide (Al<sub>0.33</sub>LiTi<sub>0.67</sub>O<sub>2</sub>)  
206552-70-7, Aluminum **lithium** vanadium oxide  
(Al<sub>0.67</sub>LiV<sub>0.33</sub>O<sub>2</sub>) 206552-71-8, Aluminum **lithium** vanadium  
oxide (Al<sub>0.33</sub>LiV<sub>0.67</sub>O<sub>2</sub>) 206552-72-9, Aluminum **lithium**

manganese oxide (Al<sub>0.67</sub>LiMn<sub>0.33</sub>O<sub>2</sub>) 206552-73-0, Aluminum  
**lithium** manganese oxide (Al<sub>0.33</sub>LiMn<sub>0.67</sub>O<sub>2</sub>) 206552-74-1,  
 Aluminum iron **lithium** oxide (Al<sub>0.67</sub>Fe<sub>0.33</sub>LiO<sub>2</sub>)  
 206552-75-2, Aluminum iron **lithium** oxide  
 (Al<sub>0.33</sub>Fe<sub>0.67</sub>LiO<sub>2</sub>) 206552-76-3, Aluminum cobalt **lithium**  
 oxide (Al<sub>0.67</sub>Co<sub>0.33</sub>LiO<sub>2</sub>) 206552-77-4, Aluminum cobalt  
**lithium** oxide (Al<sub>0.33</sub>Co<sub>0.67</sub>LiO<sub>2</sub>)  
 (for **battery cathodes**)

L64 ANSWER 6 OF 16 HCA COPYRIGHT 2003 ACS on STN

128:156618 Electrolyte for secondary **lithium batteries**

. La Fleur, Edward Ewart (Rohm and Haas Co., USA). Eur. Pat. Appl.  
 EP 821368 A2 19980128, 26 pp. DESIGNATED STATES: R: AT, BE, CH,  
 DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI.  
 (English). CODEN: EPXXDW. APPLICATION: EP 1997-305437 19970721.  
 PRIORITY: US 1996-22543 19960723.

AB An oligomeric compn. with units capable of complexation with  
 conductive metal salts, preferably Li salts, and with  
 terminal units which do not complex with conductive metal salts or  
 with **electrode** components, the oligomer preferably  
 combined with a sol. conductive metal salt, preferably a Li  
 salt, yields a conducting polymer system useful in  
**electrolytic cells**, such as **secondary**  
**Li batteries**, without the need for volatile polar  
 solvents. Combination of the oligomer with an acrylic polymer blend  
 provides a supported electrolyte. The conductive metal salt, such  
 as Li bis(trifluoromethylsulfonyl)imide, may be  
 incorporated during the oligomerization reaction.

IT **97008-71-4DP, lithium complexes**

(electrolyte for secondary **lithium batteries**)

RN 97008-71-4 HCA

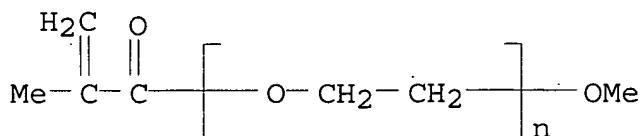
CN 2-Propenoic acid, ethyl ester, polymer with .alpha.-(2-methyl-1-oxo-  
 2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX  
 NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

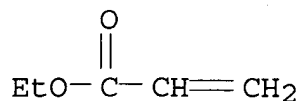
CCI PMS



CM 2

CRN 140-88-5

CMF C5 H8 O2



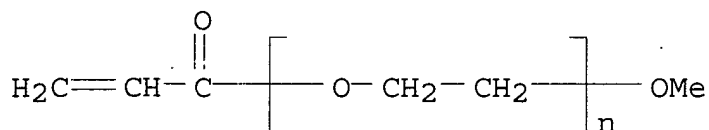
- IC ICM H01B001-12  
ICS H01M006-18
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 37
- ST **lithium battery** electrolyte oligomeric compn
- IT **Battery** electrolytes  
(oligomeric compn. with units capable of complexation with  
conductive **lithium** salts for)
- IT 9010-88-2DP, Ethyl acrylate-methyl methacrylate copolymer,  
**lithium** complexes 88446-64-4DP, **lithium**  
complexes 97008-71-4DP, **lithium** complexes  
114866-27-2DP, **lithium** complexes 202406-23-3DP,  
**lithium** complexes 202658-69-3DP, **lithium**  
complexes 202658-70-6DP, **lithium** complexes  
202658-71-7DP, **lithium** complexes  
(electrolyte for secondary **lithium batteries**)
- IT 9010-88-2DP, Ethyl acrylate-methyl methacrylate copolymer,  
**lithium** complexes 88446-64-4DP, **lithium**  
complexes 97008-71-4DP, **lithium** complexes  
114866-27-2DP, **lithium** complexes 202406-23-3DP,  
**lithium** complexes 202658-69-3DP, **lithium**  
complexes 202658-70-6DP, **lithium** complexes  
202658-71-7DP, **lithium** complexes  
(electrolyte for secondary **lithium batteries**)
- L64 ANSWER 7 OF 16 HCA COPYRIGHT 2003 ACS on STN
- 124:262057 Ion-conductive polymers for use as electrolytes in chargeable  
**batteries** or as **binders** for composite  
**electrodes**. Benrabah, Djamila; Armand, Michel;  
Delabouglise, Didier (Centre National de la Recherche Scientifique,  
Fr.; Hydro-Quebec, Montreal, Can.). Ger. Offen. DE 19527362 A1  
19960201, 7 pp. (German). CODEN: GWXXBX. APPLICATION: DE  
1995-19527362 19950726. PRIORITY: FR 1994-9347 19940728.
- AB The title polymers, which can be linear, branched, or of comb  
configuration, bear ionic groups prepd. by reaction of allyl,  
glycidyl, vinylbenzyl, (meth)acryloyl, or H groups on polymers of  
specified structure with compds. bearing geminal  
fluoroalkanesulfonyl groups. Heating 4 g 5:95 allyl glycidyl  
ether-ethylene oxide copolymer (mol. wt. 230,000) with 530 g  
**Li**[CH<sub>2</sub>:CHCH<sub>2</sub>C(SO<sub>2</sub>CF<sub>3</sub>)<sub>2</sub>] in MeCN contg. 70 mg Bz<sub>2</sub>O<sub>2</sub> gave a  
polymer soln. which was cast on a polypropylene film and dried at  
80.degree.. The use of such a film in a chargeable **battery**  
is exemplified.
- IT 32171-39-4DP, Polyethylene glycol methyl ether acrylate,  
reaction products with bis[(trifluoromethyl)sulfonyl]propyl acrylate  
**Li** salt



(ion-conductive polymers for use as electrolytes in chargeable  
**batteries** or as **binders** for composite  
**electrodes**)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-  
(9CI) (CA INDEX NAME)



IC ICM C08G085-00

ICS C08G081-00; C08G065-22; C08G065-32; C08G065-34; C08G065-48;  
H01M010-40; H01M004-40

ICA G02F001-15

CC 35-8 (Chemistry of Synthetic High Polymers)

ST ion conductive polymer prepn; **battery** electrolyte polymer  
conductive; **electrode** composite polymer conductive;  
trifluoromethylsulfonylbutene salt polymer conductive; allyl  
glycidyl ether copolymer conductive; ethylene oxide copolymer  
conductive

IT **Batteries**, secondary

Electric conductors, polymeric

**Electrodes**

(ion-conductive polymers for use as electrolytes in chargeable  
**batteries** or as **binders** for composite  
**electrodes**)

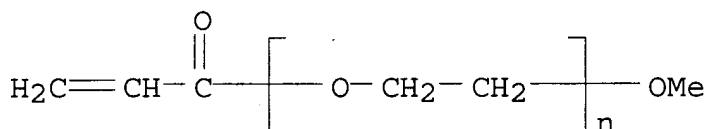
IT Polyoxyalkylenes, preparation

(reaction products, with trifluoromethylsulfone deriv. salts;  
ion-conductive polymers for use as electrolytes in chargeable  
**batteries** or as **binders** for composite  
**electrodes**)

IT 1871-57-4DP, reaction products with polyoxyethylene triol and  
bis[(trifluoromethyl)sulfonyl]butanol K salt 26282-59-7DP, Allyl  
glycidyl ether-ethylene oxide copolymer, reaction products with  
bis[(trifluoromethyl)sulfonyl]butene Li salt -  
31694-55-0DP, reaction products with bis[(trifluoromethyl)sulfonyl]b  
utanol K salt and chloro(chloromethyl)propene **32171-39-4DP**  
, Polyethylene glycol methyl ether acrylate, reaction products with  
bis[(trifluoromethyl)sulfonyl]propyl acrylate Li salt  
175220-33-4P 175220-35-6P 175220-36-7DP, reaction products with  
allyl glycidyl ether-ethylene oxide copolymer 175220-37-8DP,  
reaction products with polyoxyethylene triol and  
chloro(chloromethyl)propene 175220-38-9DP, reaction products with  
polyethylene glycol Me ether acrylate

(ion-conductive polymers for use as electrolytes in chargeable  
**batteries** or as **binders** for composite  
**electrodes**)

- 124:237220 Manufacture of **batteries** containing ion-conductive polymer electrolytes. Takeda, Kazunari; Ido, Shuichi; Horibe, Juji; Ogyama, Shinji (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07335257 A2 19951222 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-123453 19940606.
- AB The **batteries** comprise electrolytes contg. ion-conductive polymer compds. dissolved with .gtoreq.1 ionic compds., composite **cathodes** contg. the electrolytes, and composite **anodes** contg. the electrolytes or alkali metals-contg. **anodes**, where the manuf. comprises forming electron-conducting layers contg. electron-conducting particles having .ltoreq.3 .mu.m and **binders** by pad printing or gravure offset printing between **cathode** current collectors and/or **anode** current collectors and the **cathodes** and/or the **anodes**. The ion-conductive polymer compds. may contain (1)  $R_1(CH_2CH_2O)_m[CH_2C(R_2)HO]nC(O)C(R_3):CH_2$  ( $R_1-3 = H$ ,  $C.gtoeq.1$  lower alkyl;  $m.gtoeq.1$ ;  $n.gtoeq.1$ ;  $n/m = 0-5$ ),  $CH_2:C(R_4)C(O)(CH_2CH_2O)_k[CH_2C(R_5)HO]lC(O)C(R_6):CH_2$  ( $R_4-6 = H$ ,  $C.gtoeq.1$  lower alkyl;  $k.gtoeq.3$ ;  $l.gtoeq.0$ ;  $l/k = 0-5$ ),  $C\{H_2O(CH_2CH_2O)p_1[CH_2C(R_7)HO]q_1C(O)C(R_8):CH_2\}$ ,  $C\{HO(CH_2CH_2O)p_2[CH_2C(R_7)HO]q_2C(O)C(R_8):CH_2\}$ ,  $C\{H_2O(CH_2CH_2O)p_3[CH_2C(R_7)HO]q_3C(O)C(R_8):CH_2\}$  ( $R_7-8 = H$ ,  $C.gtoeq.1$  lower alkyl;  $p_1-3.gtoeq.3$ ;  $q_1-3.gtoeq.0$ ;  $q_1/p_1 = 0-5$ ;  $q_2/p_2 = 0-5$ ;  $q_3/p_3 = 0-5$ ;  $p_1 + q_1.gtoeq.10$ ;  $p_2 + q_2.gtoeq.10$ ;  $p_3 + q_3.gtoeq.10$ ), (2) ionic compds., (3) ionic compds.-sol. org. compds., and (4) .ltoreq.20 wt.% hydrophobically treated inorg. compds. The **batteries** have good adhesion and low internal resistance.
- IT 32171-39-4  
(electrolytes contg.; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- RN 32171-39-4 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



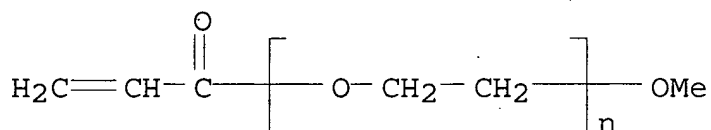
- IC ICM H01M010-40  
ICS H01M006-18; H01M010-38
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST ion conductive polymer electrolyte **battery**; printing electron conductive layer **battery**; pad printing conductive layer **battery**; gravure printing conductive layer **battery**
- IT Polyamides, uses  
(**binders**, conductive layers contg.; manuf. of

- batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT Printing, nonimpact  
(gravure, offset; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT **Batteries**, secondary  
**Battery** electrolytes  
(manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT Printing, impact  
(pad; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT 145991-66-8, Aerosil R 972D  
(Aerosil R 972D; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT 7439-93-2, **Lithium**, uses  
(**anode**; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT 7782-42-5, Graphite, uses  
(conductive layer contg.; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT 12597-68-1, Stainless steel, uses  
(current collector; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT 96-48-0,  $\gamma$ -Butyrolactone 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane  
(electrolyte solvent; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT 7791-03-9, **Lithium** perchlorate 14283-07-9,  
**Lithium** tetrafluoroborate  
(electrolyte; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)
- IT 26570-48-9 32171-39-4 111804-95-6  
(electrolytes contg.; manuf. of **batteries** contg. ion-conductive polymer compds. by printing electron-conductive layers for adhesion and low internal resistance)

L64 ANSWER 9 OF 16 HCA COPYRIGHT 2003 ACS on STN  
124:92606 **Batteries** containing ion-conducting macromolecular compounds. Takeda, Kazunari; Horibe, Juji (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07272757 A2 19951020 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-58556

19940329.

- AB The **batteries** comprise electrolytes contg. ion-conducting macromol. compds. dissolved with .gtoreq.1 ionic compds. and composite **cathodes** and composite **anodes** contg. the ion-conducting macromol. compds. or alkali metal **anodes**, where electron-conducting layers contg. electron-conducting particles and polymers contg. acid amide bonds and imide groups as **binders** are formed between **cathode** current collectors and/or **anode** current collectors and the **electrodes**. The ion-conducting macromol. compds. may consist of (1)  $R_1(C_2H_4O)_m[CH_2CH(R_2)O]_nC(O)C(R_3):CH_2$  ( $R_1-3 = H$ , lower alkyl,  $m$  .gtoreq.1,  $n$  .gtoreq.0,  $n/m = 0-5$ ),  $CH_2:C(R_4)C(O)(C_2H_4O)_s[CH_2CH(R_5)O]_tC(O)C(R_6):CH_2$  ( $R_4-6 = H$ , lower alkyl,  $s$  .gtoreq.3,  $t$  .gtoreq.0,  $t/s = 0-5$ ),  $CH_2\{O(C_2H_4O)_{p1}[CH_2CH(R_7)O]_{q1}C(O)C(R_8):CH_2\}CH\{O(C_2H_4O)_{p2}[CH_2CH(R_7)O]_{q2}C(O)C(R_8):CH_2\}CH_2\{O(C_2H_4O)_{p3}[CH_2CH(R_7)O]_{q3}C(O)C(R_8):CH_2\}$  ( $R_7-8 = H$ , lower alkyl,  $p_1$  .gtoreq.3,  $p_2$  .gtoreq.3,  $p_3$  .gtoreq.3,  $q_1$  .gtoreq.0,  $q_2$  .gtoreq.0,  $q_3$  .gtoreq.0,  $q_1/p_1 = 0-5$ ,  $q_2/p_2 = 0-5$ ,  $q_3/p_3 = 0-5$ ,  $p_1 + q_1$  .gtoreq. 10,  $p_2 + q_2$  .gtoreq. 10,  $p_3 + q_3$  .gtoreq. 10), (2) ionic compds., (3) org. compds. dissolving ionic compds., and/or (4) inorg. compds. with hydrophobically treated surfaces. The electrolytes and the **electrodes** may be formed by irradiation of active rays. The **batteries** have good adhesion of current collectors with **electrodes**, low internal elec. resistance, prevention of electrolyte leakage, and high safety.
- IT 32171-39-4  
(**batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- RN 32171-39-4 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



- IC ICM H01M010-40  
ICS H01M004-62
- ICA C08F290-06
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST ion conducting polyoxyethylene electrolyte **battery**;  
polyamideimide polymer **battery** adhesion; safety  
polyamideimide polymer **battery**
- IT **Battery** electrolytes  
(**batteries** contg. electron-conducting layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)

- IT **Batteries, secondary**  
(**batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- IT Polyoxyalkylenes, uses  
(ethylene oxide block copolymers; **batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- IT Polyimides, uses  
(polyamide-, **binders; batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- IT Polyamides, uses  
(polyimide-, **binders; batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- IT 7439-93-2, **Lithium**, uses 7440-44-0, Carbon, uses  
(**anode**, composite; **batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- IT 96-48-0, .gamma.-Butyrolactone 108-32-7, Propylene carbonate  
110-71-4, 1,2-Dimethoxyethane 7791-03-9, **Lithium**  
perchlorate 14283-07-9, **Lithium** tetrafluoroborate  
26570-48-9 32171-39-4 76416-58-5 145991-66-8, Aerosil  
R 972D  
(**batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- IT 1313-13-9, Manganese dioxide, uses 12190-79-3  
(**cathode**, composite; **batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- IT 7429-90-5, Aluminum, uses 12597-68-1, Stainless steel, uses  
(current collector; **batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)
- IT 7429-90-5, Aluminum, uses 12597-68-1, Stainless steel, uses  
(current collector; **batteries** contg. electron-conductive layers contg. polyamideimides and ion-conducting macromol. compds. for adhesion and low elec. resistance)

L64 ANSWER 10 OF 16 HCA COPYRIGHT 2003 ACS on STN

119:52928 Secondary solid polymer-electrolyte **batteries**.

Inada, Kuniaki; Tsucha, Kenji; Kuroda, Nobuyuki; Akita, Seiichi;  
Suga, Masanobu (Toshiba Battery, Japan; Nippon Oil Co Ltd). Jpn.

Kokai Tokkyo Koho JP 05067476 A2 19930319 Heisei, 8 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1991-254158 19910906.

- AB The **batteries** use a solid polymer electrolyte retained in a nonwoven fabric or a porous membrane held between **electrodes**, where the electrolyte comprises a copolymer of  $\text{CH}_2:\text{CRCOO}(\text{CH}_2\text{CH}_2\text{O})_m\text{R}_1$  ( $\text{R} = \text{H}$  or  $\text{C}_1\text{-5 alkyl}$ ,  $\text{R}_1 = \text{C}_1\text{-5 alkyl}$ ,  $m = 2\text{-30 integer}$ ) with  $\text{CH}_2:\text{CR}_2\text{CN}$  ( $\text{R}_2 = \text{H}$  or  $\text{C}_1\text{-3 alkyl}$ ) and/or  $\text{CH}_2:\text{CR}_2\text{COOMe}$ , PEG di-Me ether, and an alkali metal or  $\text{NH}_4^+$  salt in a PEG di(meth)acrylate copolymer matrix. **Li-LiMn<sub>2</sub>O<sub>4</sub> batteries** using this electrolyte have long cycle life and good low-temp. performance.
- IC ICM H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST fabric electrolyte retainer **lithium battery**;  
**lithium** manganese oxide **battery** electrolyte;  
**battery** electrolyte acrylic copolymer; dimethyl ether  
**battery** electrolyte; diacrylate **battery** electrolyte
- IT **Battery** electrolytes  
(acrylic polymer-**lithium** salt, with nonwoven fabric or porous film retainers)
- IT Polyamide fibers, uses  
(fabrics, for retaining polymer electrolytes in secondary **lithium batteries**)
- IT **Batteries**, secondary  
(solid-state, **lithium-lithium** manganese oxide)
- IT 7791-03-9, **Lithium** perchlorate 9051-33-6 24991-55-7  
25852-47-5 59049-11-5  
(electrolytes contg., with nonwoven fabric or porous film retainers, for secondary **lithium batteries**)

L64 ANSWER 11 OF 16 HCA COPYRIGHT 2003 ACS on STN

112:39784 Solid electrolytes. Ballard, Denis George Harold; Cheshire, Philip; Przeworski, Josef Emilio (Imperial Chemical Industries PLC, UK). Eur. Pat. Appl. EP 332771 A1 19890920, 17 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1988-302250 19880315.

- AB Solid electrolytes for a **battery** comprise a matrix of crosslinked polymer, a polar aprotic liq. dispersed in the matrix, and an ionized  $\text{NH}_4^+$ , alkali metal, or alk. earth salt dissolved in the matrix and/or liq. The polymer has main chains, which are linked to side chains having polar groups free of active H atoms. The aprotic liq. has a dielec. const. of  $\geq 5.0$  and/or a dipole moment of  $\geq 3 \text{ D}$ , e.g., ethylene or propylene carbonate, dialkylformamide or dialkylsulfoxide, cyclic ether, sulfonane, etc. The electrolytes are prep'd. by forming the matrix, incorporating the highly ionized salt in the matrix or its precursor, and by introducing the aprotic liq. into the matrix and its precursor. A **battery cathode** comprises a solid dispersion of a potential oxidant and a highly conductive material, i.e., 30-60%  $\text{MnO}_2$  and 2-10% carbon black or a transition metal as particles of

<40 .mu.m, in a matrix of the solid electrolyte. A **battery** includes a conductive **anode** and the described **cathode** and solid electrolyte. Several polymers were made and elec. conductivities of these polymers contg. LiF3CSO3 and various aprotic polar liqs. were detd.

IT 123547-25-1D, **lithium** complexes  
(aprotic polar liq.-contg., for **cathodes** and electrolytes of **lithium batteries**)

RN 123547-25-1 HCA

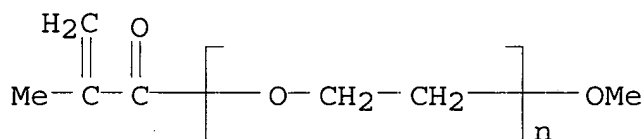
CN 2-Propenoic acid, 2-methyl-, 2-propenyl ester, polymer with .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2

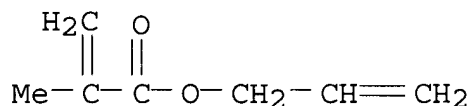
CCI PMS



CM 2

CRN 96-05-9

CMF C7 H10 O2



IC ICM H01M006-18

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 76

ST **lithium** manganese dioxide polymer **battery**;  
**battery** solid electrolyte polymer; **lithium**  
trifluoromethanesulfonate polymer electrolyte **battery**;  
propylene carbonate polymer electrolyte **battery**;  
**cathode battery lithium**  
trifluoromethanesulfonate polymer; elec cond polymer **lithium**  
trifluoromethanesulfonate

IT Electric conductivity and conduction  
(of polymers contg. **lithium** trifluoromethane sulfonate  
and aprotic polar liqs., for **battery cathodes**  
and electrolytes)

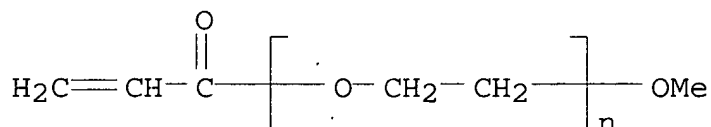
IT **Cathodes**

- (**battery**, manganese dioxide, contg. polymers having **lithium** trifluoromethane sulfonate and aprotic polar liqs.)
- IT Polycarbonates, compounds  
(methacrylates, polymers aprotic polar liq.- and salt-contg., for **cathodes** and electrolytes of **lithium batteries**)
- IT Siloxanes and Silicones, uses and miscellaneous  
(polyoxyalkylene-, graft, aprotic polar liq.- and salt-contg., for **cathodes** and electrolytes of **lithium batteries**)
- IT Polyoxyalkylenes, uses and miscellaneous  
(siloxane-, graft, aprotic polar liq.- and salt-contg., for **cathodes** and electrolytes of **lithium batteries**)
- IT **Batteries**, secondary  
(solid-electrolyte, **lithium** trifluoromethanesulfonate- and polar aprotic liq.-contg. polymer)
- IT 7439-93-2D, **Lithium**, complexes with polymers  
66536-63-8D, **lithium** complexes 108927-94-2D,  
**lithium** complexes 115383-11-4D, **lithium**  
complexes 115401-75-7D, **lithium** complexes  
123547-25-1D, **lithium** complexes 124124-23-8D,  
**lithium** complexes  
(aprotic polar liq.-contg., for **cathodes** and  
electrolytes of **lithium batteries**)
- IT 1313-13-9, Manganese dioxide, uses and miscellaneous 9033-83-4,  
Polyphenylene  
(**cathodes** contg. polymers having **lithium**  
trifluoromethane sulfonate and aprotic polar liqs.)
- IT 33454-82-9, **Lithium** trifluoromethanesulfonate  
(polymers contg. aprotic liqs. and for **cathodes** and  
electrolytes for **lithium batteries**)
- IT 75-12-7D, Formamide, dialkyl derivs. 96-49-1, 1,3-Dioxolan-2-one  
108-32-7, Propylene carbonate 120-62-7D, Sulfoxide, dialkyl  
derivs. 126-33-0, Sulfolane 872-50-4, N-Methylpyrrolidone, uses  
and miscellaneous 123652-44-8  
(polymers contg. **lithium** trifluoromethane sulfonate  
and, for **cathodes** and electrolytes of **lithium**  
**batteries**)
- L64 ANSWER 12 OF 16 HCA COPYRIGHT 2003 ACS on STN  
111:236650 Organic-electrolyte **lithium batteries**.  
Ashitaka, Hidetomo; Takahashi, Tooru; Ishii, Masayoshi (Ube  
Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01169874 A2  
19890705 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1987-326871 19871225.
- AB A mixt. contg. acryloyl-modified poly(alkylene oxide)s, **Li**  
salts, and polyurethanes or polyurethanepolyureas is used as  
**cathode binder** for **Li batteries**  
. The mixt. may also contain poly(alkylene glycol) derivs.  
R1O(CH2CHRO)nR2 (R, R1-2 = H, lower alkyl; n = 3-30).



**Batteries** using this **binder** have high capacity and reliability.

- IT 32171-39-4  
 (binder contg., for **cathodes** in  
 lithium batteriesy)  
 RN 32171-39-4 HCA  
 CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-  
 (9CI) (CA INDEX NAME)



- IC ICM H01M004-62  
 ICS H01M004-06; H01M006-18  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38  
 ST **battery cathode binder** electrolyte  
 polymer; polyalkylene oxide **battery cathode**  
**binder**; polyurethanepolyurea **battery**  
**cathode binder**  
 IT Urethane polymers, uses and miscellaneous  
 (binder contg., for **cathodes** in  
 lithium batteriesy)  
 IT Rubber, urethane, uses and miscellaneous  
 (electrolytes of thin **batteries** contg. Nipollan 4330,  
 as **binder** for **battery cathodes**,  
 curing of)  
 IT **Cathodes**  
 (battery, binders for, polymer-electrolyte  
 mixt.)  
 IT 32171-39-4  
 (binder contg., for **cathodes** in  
 lithium batteriesy)  
 IT 32171-39-4  
 (binder contg., for **cathodes** in  
 lithium batteriesy)  
 L64 ANSWER 13 OF 16 HCA COPYRIGHT 2003 ACS on STN  
 111:198553 Solid-electrolyte electrochemical devices. Cheshire, Philip;  
 Przeworski, Jozef Emilio (Imperial Chemical Industries PLC, UK).  
 Eur. Pat. Appl. EP 331342 A2 19890906, 20 pp. DESIGNATED STATES: R:  
 AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE. (English). CODEN:  
 EPXXDW. APPLICATION: EP 1989-301727 19890222. PRIORITY: GB  
 1988-4860 19880301.  
 AB A solid-electrolyte **battery** in the form of a flexible  
 multisheathed cable comprises an **anode**, a **cathode**  
 , and a solid electrolyte of a polymer matrix, a polar aprotic liq.  
 dispersed in the matrix, and an ionized NH4+, alkali metal, or alk.  
 earth salt dissolved in the matrix and/or liq. The polymer has main

chains, which are linked to side chains having polar groups free of active H atoms. The polymer main chains are crosslinked and essentially org., and the side chains comprise ester or ether linkages. The main chains are hydrocarbons or polyethers crosslinked by C-C bonds or oxy functions between the main and/or side chains, or in other pendent group. The aprotic polar liq. is ethylene carbonate or propylene carbonate, a dialkylformamide or dialkylsulfoxide, a cyclic ether, sulfolane, etc. The **cathode** includes a dispersion of 30-60% MnO<sub>2</sub> and 2-10% carbon black or transition metal as <40-.mu.m particles in the matrix of the invention solid electrolyte. Several polymers were made and elec. conductivities of these polymers contg. LiF<sub>3</sub>CSO<sub>3</sub> and various aprotic polar liqs. were detd. Performances of **Li batteries** having invention solid electrolytes and invention **cathodes** are also reported.

IT 123547-25-1D, **lithium** complexes  
(electrolyte, aprotic polar liq.-contg., for **lithium batteries**)

RN 123547-25-1 HCA

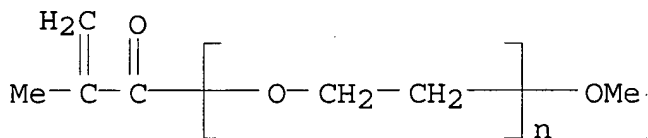
CN 2-Propenoic acid, 2-methyl-, 2-propenyl ester, polymer with .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

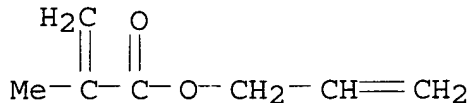
CCI PMS



CM 2

CRN 96-05-9

CMF C7 H10 O2



IC ICM H01M006-18

ICS H01G009-00

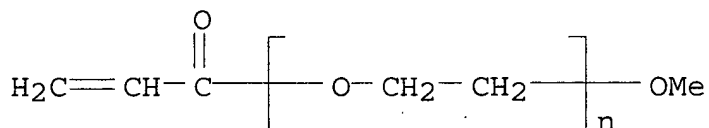
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 72

ST **lithium** manganese dioxide **battery** electrolyte;

- trifluoromethanesulfonate **lithium** polymer electrolyte  
**battery**; propylene carbonate polymer electrolyte  
**battery**; elec cond polymer **lithium**  
trifluoromethanesulfonate
- IT Electric conductivity and conduction  
(of solid polymers-**lithium** trifluoromethane  
sulfonate-aprotic polar liqs. electrolytes, for **battery**  
**cathodes** and electrolytes)
- IT Polycarbonates, compounds  
(methacrylates, electrolytes contg. polymers and **lithium**  
salt and, for **lithium batteries**)
- IT Siloxanes and Silicones, uses and miscellaneous  
(polyoxyalkylene-, graft, electrolytes contg. polymers and  
**lithium** salt and, for **lithium batteries**  
)
- IT Polyoxyalkylenes, uses and miscellaneous  
(siloxane-, graft, electrolytes contg. polymers and  
**lithium** salt and, for **lithium batteries**  
)
- IT **Batteries**, secondary  
(solid-electrolyte, **lithium**, polymer-**lithium**  
salt-polar aprotic liq. electrolytes for)
- IT 7439-93-2D, **Lithium**, complexes with polymers  
80108-02-7D, **lithium** complexes 115383-11-4D,  
**lithium** complexes 115401-75-7D, **lithium**  
complexes 123547-19-3D, **lithium** complexes  
123547-25-1D, **lithium** complexes 124124-23-8D,  
**lithium** complexes  
(electrolyte, aprotic polar liq.-contg., for **lithium**  
**batteries**)
- IT 75-12-7D, Formamide, dialkyl derivs. 96-49-1, Ethylene carbonate  
108-32-7, Propylene carbonate 120-62-7D, Sulfoxide, dialkyl  
derivs. 126-33-0, Sulfolane 872-50-4, N-Methylpyrrolidone, uses  
and miscellaneous 123652-44-8  
(electrolytes contg. polymers and **lithium**  
trifluoromethane sulfonate and, for **lithium**  
**batteries**)
- IT 75-12-7D, Formamide, dialkyl derivs. 96-49-1, Ethylene carbonate  
108-32-7, Propylene carbonate 120-62-7D, Sulfoxide, dialkyl  
derivs. 126-33-0, Sulfolane 872-50-4, N-Methylpyrrolidone, uses  
and miscellaneous 123652-44-8  
(electrolytes contg. polymers and **lithium**  
trifluoromethane sulfonate and, for **lithium**  
**batteries**)
- L64 ANSWER 14 OF 16 HCA COPYRIGHT 2003 ACS on STN  
111:177957 Organic-electrolyte **lithium batteries**.  
Ashitaka, Hidetomo; Takahashi, Tooru; Suehiro, Tsutomu (Ube  
Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01169875 A2  
19890705 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1987-330605 19871225.
- AB A mixt. contg. an acryloyl-modified poly(alkylene oxide)s and a

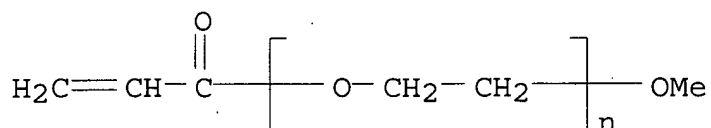
**Li** salt is used as **cathode binder** for the title **batteries**. The mixt. may also contain poly(alkylene oxide)s  $R1O(CH_2CHRO)nR2$  ( $R, R1-2 = H, \text{lower alkyl}; n = 3-30$ ). **Batteries** using this **binder** have high capacity and reliability.

- IC ICM H01M004-62  
ICS H01M004-06; H01M006-18
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST **battery cathode binder** electrolyte  
polymer; polyalkylene oxide **battery cathode binder**
- IT **Cathodes**  
(**battery, binders** for, polymer-salt mixt)
- IT 24991-55-7, Poly(ethylene glycol) dimethyl ether 25852-47-5,  
Poly(ethylene glycol) dimethacrylate 32171-39-4  
(**binder, for cathodes, in lithium batteries**)
- L64 ANSWER 15 OF 16 HCA COPYRIGHT 2003 ACS on STN  
111:177956 Organic-electrolyte **lithium batteries**.  
Ashitaka, Hidetomo; Takahashi, Tooru; Ishii, Masayoshi (Ube Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01169873 A2  
19890705 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1987-326870 19871225.
- AB A mixt. contg. an acryloyl-modified poly(ethylene oxide)  
 $CH_2:CRCO_2(CH_2CHRO)nR$  ( $R = H, \text{lower alkyl}$ ), a **Li** salt, and  
a poly(ethylene oxide) with mol. wt.  $>10,000$  is used as  
**cathode binder** in the title **batteries**.  
The mixt. may also contain poly(alkylene oxide)s  $R1O(CH_2CHRO)nR2$   
( $R, R1-2 = H, \text{lower alkyl}; n = 3-30$ ). **Batteries** using  
this **binder** have high capacity and reliability.
- IT 32171-39-4  
(**binder, for cathodes, in lithium batteries, AM90G**)
- RN 32171-39-4 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-  
(9CI) (CA INDEX NAME)



- IC ICM H01M004-62  
ICS H01M004-06; H01M006-18
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST **battery cathode binder** electrolyte  
polymer; acrylol modified PEO **cathode binder**;  
PEO **lithium salt cathode binder**

- IT **Cathodes**  
(battery, binders for, polymer-salt mixt.)
- IT 32171-39-4  
(binder, for cathodes, in lithium batteries, AM90G)
- IT 24991-55-7, Poly(ethylene glycol) dimethyl ether  
(binder, for cathodes, in lithium batteries, CLE400)
- IT 24991-55-7, Poly(ethylene glycol) dimethyl ether  
(binder, for cathodes, in lithium batteries, CLE400)
- L64 ANSWER 16 OF 16 HCA COPYRIGHT 2003 ACS on STN
- 109:213631 Manufacture of **cathodes** for **lithium batteries**. Ashitaka, Hidetomo; Takahashi, Tooru; Shimizu, Ryuichi (Ube Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63181259 A2 19880726 Showa, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-12273 19870123.
- AB **Cathodes** for **Li batteries** contain a curable **binder** consisting of an acryloyl-terminated poly(alkylene oxide) having acryloyl groups  $\text{CH}_2\text{:C(R)CO}_2$  (R = H or lower alkyl) and poly(alkylene oxide) structure  $(\text{CH}_2\text{CHR}_1\text{O})_m$  (m = 1-30, and  $\text{R}_1$  = H or lower alkyl), a **Li** salt, and a poly(alkylene glycol)  $\text{R}_2\text{O}(\text{CH}_2\text{CHR}_2\text{O})_n\text{R}_2$  (n = 3-30, and  $\text{R}_2$  = H or lower alkyl). Thus, a mixt. of  $\text{MnO}_2$  51.9, acetylene black 9.7, AM90G [methoxy(poly A **Li** disk was coated with an electrolyte mixt. contg. AM90G, M9G,  $\text{LiClO}_4$  in LX521, and photosensitizer, and cured by UV radiation to form an **anode** -electrolyte composite. A **battery** using the prepd. **cathode** and composite had 7.3 mA-h capacity, vs. 3.5 mA-h for a **battery** having a **cathode** using a PTFE **binder**.
- IT 32171-39-4  
(binders contg. lithium salt and poly(oxyalkylene) and, for **battery cathodes**)
- RN 32171-39-4 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



- IC ICM H01M004-62  
ICS H01M004-02; H01M004-04
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **cathode battery polyalkylene oxide binder**
- IT Polyoxyalkylenes, uses and miscellaneous  
(binders contg. lithium salt and

- acryloyl-terminated poly(oxyalkylene) and, for **battery cathodes**)
- IT Polyoxyalkylenes, uses and miscellaneous (acrylate-terminated, **binders** contg. **lithium** salt and poly(oxyalkylene) and, for **battery cathodes**)
- IT **Cathodes** (**battery**, **binders** contg. poly(alkylene glycol) and acryloyl-terminated polyoxyalkylene and **lithium** perchlorate for)
- IT 24991-55-7, Dimethoxypoly(ethylene glycol) 25852-47-5, Poly(ethylene glycol) dimethacrylate (**binders** contg. **lithium** salt and acryloyl-terminated poly(oxyalkylene) and, for **battery cathodes**)
- IT 32171-39-4 (**binders** contg. **lithium** salt and poly(oxyalkylene) and, for **battery cathodes**)
- IT 32171-39-4 (**binders** contg. **lithium** salt and poly(oxyalkylene) and, for **battery cathodes**)

=> d 165 1-10 cbib abs hitstr hitind

L65 ANSWER 1 OF 10 HCA COPYRIGHT 2003 ACS on STN

135:63828 Polymer gel electrolyte for **lithium** ion

**batteries**. Jannasch, Patric; Gavelin, Patrik

(Telefonaktiebolaget LM Ericsson, Swed.). PCT Int. Appl. WO

2001047047 A1 20010628, 24 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-SE2600

20001220. PRIORITY: SE 1999-4696 19991220.

- AB A polymer gel electrolyte comprising a metal salt, a polymer, optionally a plasticizer, characterized in that the polymer comprises a carbon-hydrogen base chain having at least two reactive groups incorporated wherein the reactive groups have different reactivities. The polymer gel electrolyte neutralizes a passivating layer in the form of waste products produced in the electrolyte phase by the metal salt and solvents. The decrease in the growth of the passivating layer provides a **battery** cell with a better effect and a longer life.

- IT 332380-39-9P (polymer gel electrolyte for **lithium** ion **batteries**)

RN 332380-39-9 HCA

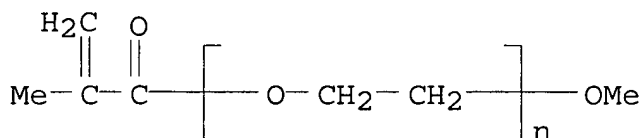
CN 2-Propenoic acid, 2-methyl-, 2-propenyl ester, polymer with .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2

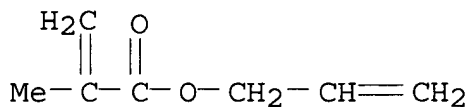
CCI PMS



CM 2

CRN 96-05-9

CMF C7 H10 O2



IC ICM H01M006-18

ICS H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 72, 76

ST polymer gel electrolyte **lithium ion battery**

IT Telephones

(cellular; polymer gel electrolyte for **lithium ion batteries**)

IT Secondary **batteries**

(**lithium**; polymer gel electrolyte for **lithium ion batteries**)

IT **Battery** electrolytes

Capacitors

Semiconductor devices

Sensors

(polymer gel electrolyte for **lithium ion batteries**)

IT Computers

(portable; polymer gel electrolyte for **lithium ion batteries**)

IT 107-21-1, 1,2-Ethanediol, uses

(dopant; polymer gel electrolyte for **lithium ion batteries**)

IT 96-48-0, .gamma.-Butyrolactone 540-72-7, Sodium thiocyanate

2923-20-8 7775-09-9, Sodium chlorate 7791-03-9, **Lithium**  
perchlorate 10034-81-8, Magnesium perchlorate 13755-29-8, Sodium  
tetrafluoroborate 14075-53-7, Potassium tetrafluoroborate  
14283-07-9, **Lithium** tetrafluoroborate 14708-13-5,  
Magnesium tetrafluoroborate 18424-17-4, **Lithium**  
hexafluoroantimonate 21324-40-3, **Lithium**  
hexafluorophosphate 29935-35-1, **Lithium**  
hexafluoroarsenate 33454-82-9, **Lithium** triflate  
61852-37-7 90076-65-6 132404-42-3 132843-44-8 189286-78-0  
324744-93-6 345891-31-8 345891-32-9  
(polymer gel electrolyte for **lithium** ion  
**batteries**)  
IT 332380-39-9P 345891-33-0P  
(polymer gel electrolyte for **lithium** ion  
**batteries**)  
IT 332380-39-9P 345891-33-0P  
(polymer gel electrolyte for **lithium** ion  
**batteries**)  
L65 ANSWER 2 OF 10 HCA COPYRIGHT 2003 ACS on STN  
133:254952 Polymer electrolyte for **lithium** secondary  
**batteries**. Oyama, Noboru (Japan). Eur. Pat. Appl. EP  
1037294 A2 20000920, 32 pp. DESIGNATED STATES: R: AT, BE, CH, DE,  
DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI,  
RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-105773  
20000317. PRIORITY: JP 1999-71758 19990317; JP 1999-295503  
19991018.  
AB A polymer electrolyte providing **lithium** secondary  
**batteries** in which growth of **lithium** dendrites is  
suppressed and **batteries** exhibiting excellent discharge  
characteristics in low to high temp., comprises a polymer gel  
holding a nonaq. solvent contg. an electrolyte. The polymer gel  
comprises (I) a unit derived from at least one monomer having one  
copolymerizable vinyl group and (II) a unit derived from at least  
one compd. selected from the group consisting of (II-a) a compd.  
having two acryloyl groups and a (poly)oxyethylene group, (II-b) a  
compd. having one acryloyl group and a (poly)oxyethylene group, and  
(II-c) a glycidyl ether compd., particularly the polymer gel  
comprises monomer (I), compd. (II-a), and a copolymerizable  
plasticizing compd.  
IT 59049-11-5, Blemmer PME 150-methyl methacrylate copolymer  
(polymer electrolyte for **lithium** secondary  
**batteries**)  
RN 59049-11-5 HCA  
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
.alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-  
ethanediyl) (9CI) (CA INDEX NAME)

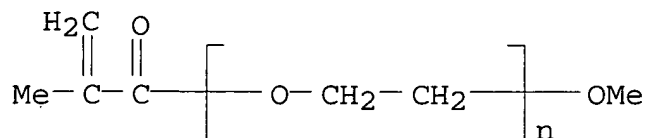
CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2



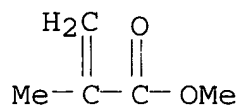
CCI PMS



CM 2

CRN 80-62-6

CMF C5 H8 O2



IC ICM H01M006-18

ICS C08L071-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 76ST **lithium battery** polymer electrolyte

IT Pyridinium compounds

(alkyl; polymer electrolyte for **lithium secondary batteries**)IT Secondary **batteries**(lithium; polymer electrolyte for **lithium secondary batteries**)IT **Battery** electrolytes

Capacitors

Polymer electrolytes

(polymer electrolyte for **lithium secondary batteries**)

IT Amides, uses

Lactones

Nitriles, uses

Polyanilines

(polymer electrolyte for **lithium secondary batteries**)

IT Phosphonium compounds

Quaternary ammonium compounds, uses

(tetraalkyl; polymer electrolyte for **lithium secondary batteries**)

IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate

108-32-7, Propylene carbonate 288-32-4D, Imidazole, alkyl deriv.

1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 7439-93-2,

**Lithium**, uses 7791-03-9, **Lithium** perchlorate

9063-88-1, Blemmer PDE 400-methyl methacrylate copolymer

14283-07-9, **Lithium** tetrafluoroborate 21324-40-3,**Lithium** hexafluorophosphate 25101-19-3,

Methylmethacrylate-triethylene glycol dimethacrylate copolymer  
 25233-30-1, Polyaniline 25777-71-3, Blemmer PDE 50-methyl  
 methacrylate copolymer 27308-26-5, Blemmer PDE 100-methyl  
 methacrylate copolymer 29403-27-8 29935-35-1, **Lithium**  
 hexafluoroarsenate 33454-82-9, **Lithium** triflate  
 35895-69-3, Tetraethylammonium trifluoromethanesulfonate  
**59049-11-5**, Blemmer PME 150-methyl methacrylate copolymer  
 72892-39-8, Blemmer PE 200-methyl methacrylate copolymer  
 81381-02-4, Acrylonitrile-triethylene glycol dimethacrylate  
 copolymer 90076-65-6 114388-54-4, Cyclohexyl methacrylate-methyl  
 methacrylate-triethylene glycol dimethacrylate copolymer  
 129283-05-2 130425-25-1, Blemmer PME 100-methyl methacrylate  
 copolymer 131651-65-5 132404-42-3 144442-23-9 294189-08-5  
 294189-09-6, Methyl methacrylate-2-methacryloyloxyethyl  
 phthalate-triethylene glycol dimethacrylate copolymer 294189-10-9,  
 Benzyl methacrylate-methyl methacrylate-triethylene glycol  
 dimethacrylate copolymer 294189-11-0, Isobornyl  
 methacrylate-methyl methacrylate-triethylene glycol dimethacrylate  
 copolymer 294189-12-1 294189-13-2 294189-14-3,  
 2-Diethylaminoethyl methacrylate-methyl methacrylate-triethylene  
 glycol dimethacrylate copolymer 294189-15-4, Methyl  
 methacrylate-triethylene glycol dimethacrylate-trifluoroethyl  
 methacrylate copolymer 294189-16-5, Diethylene glycol  
 monomethacrylate-methyl methacrylate-triethylene glycol  
 dimethacrylate copolymer 294189-17-6, Methoxyethyleneglycol  
 methacrylate-methyl methacrylate-triethylene glycol dimethacrylate  
 copolymer 294189-18-7 294189-20-1  
 (polymer electrolyte for **lithium** secondary  
**batteries**)

IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate  
 108-32-7, Propylene carbonate 288-32-4D, Imidazole, alkyl deriv.  
 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 7439-93-2,  
**Lithium**, uses 7791-03-9, **Lithium** perchlorate  
 9063-88-1, Blemmer PDE 400-methyl methacrylate copolymer  
 14283-07-9, **Lithium** tetrafluoroborate 21324-40-3,  
**Lithium** hexafluorophosphate 25101-19-3,  
 Methylmethacrylate-triethylene glycol dimethacrylate copolymer  
 25233-30-1, Polyaniline 25777-71-3, Blemmer PDE 50-methyl  
 methacrylate copolymer 27308-26-5, Blemmer PDE 100-methyl  
 methacrylate copolymer 29403-27-8 29935-35-1, **Lithium**  
 hexafluoroarsenate 33454-82-9, **Lithium** triflate  
 35895-69-3, Tetraethylammonium trifluoromethanesulfonate  
**59049-11-5**, Blemmer PME 150-methyl methacrylate copolymer  
 72892-39-8, Blemmer PE 200-methyl methacrylate copolymer  
 81381-02-4, Acrylonitrile-triethylene glycol dimethacrylate  
 copolymer 90076-65-6 114388-54-4, Cyclohexyl methacrylate-methyl  
 methacrylate-triethylene glycol dimethacrylate copolymer  
 129283-05-2 130425-25-1, Blemmer PME 100-methyl methacrylate  
 copolymer 131651-65-5 132404-42-3 144442-23-9 294189-08-5  
 294189-09-6, Methyl methacrylate-2-methacryloyloxyethyl  
 phthalate-triethylene glycol dimethacrylate copolymer 294189-10-9,  
 Benzyl methacrylate-methyl methacrylate-triethylene glycol

dimethacrylate copolymer 294189-11-0, Isobornyl  
 methacrylate-methyl methacrylate-triethylene glycol dimethacrylate  
 copolymer 294189-12-1 294189-13-2 294189-14-3,  
 2-Diethylaminoethyl methacrylate-methyl methacrylate-triethylene  
 glycol dimethacrylate copolymer 294189-15-4, Methyl  
 methacrylate-triethylene glycol dimethacrylate-trifluoroethyl  
 methacrylate copolymer 294189-16-5, Diethylene glycol  
 monomethacrylate-methyl methacrylate-triethylene glycol  
 dimethacrylate copolymer 294189-17-6, Methoxyethyleneglycol  
 methacrylate-methyl methacrylate-triethylene glycol dimethacrylate  
 copolymer 294189-18-7 294189-20-1  
 (polymer electrolyte for **lithium** secondary  
**batteries**)

L65 ANSWER 3 OF 10 HCA COPYRIGHT 2003 ACS on STN

133:180341 Polymer electrolyte **batteries** and their  
 manufacture. Ichihashi, Akira; Kita, Yoshinori; Oshita, Ryuji;  
 Kurokawa, Hiroshi; Kamino, Maruo; Fujitani, Shin; Nishio, Akiharu  
 (Sanyo Electric Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
 2000228221 A2 20000815, 10 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1999-308413 19991029. PRIORITY: JP 1998-338679  
 19981130.

AB The **batteries** use a polymer electrolyte contg. a copolymer  
 of ethylene glycol methacrylate deriv.  $\text{CH}_2:\text{CHMeCOO}(\text{CH}_2\text{CH}_2\text{O})_n\text{R}$  ( $\text{R} = \text{H}$   
 or C.gtoeq.1 alkyl group,  $n = \text{integer .gtoreq.1}$ ) and alkyl  
 methacrylate  $\text{CH}_2:\text{CHMeCOOR}'$  ( $\text{R}' = \text{C.gtoeq.4 alkyl group}$ ). The  
 electrolyte is prepd. by copolyng. the 2 monomers in **battery**  
 case to form the polymer electrolyte.

IT 74418-73-8 90692-09-4 97008-70-3  
 147488-68-4 288570-50-3 288570-51-4  
 288570-52-5 288570-53-6 288570-54-7  
 288570-55-8

(compns. and manuf. of polymer electrolytes contg. in situ  
 polyimd. methacrylate copolymer for secondary **lithium**  
**batteries**)

RN 74418-73-8 HCA

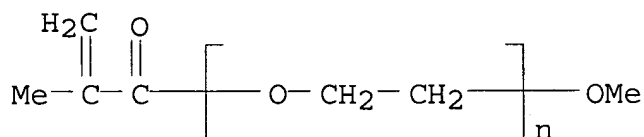
CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with  
 .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-  
 ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

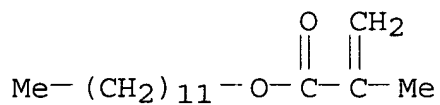
CMF (C2 H4 O) $_n$  C5 H8 O2

CCI PMS



CM 2

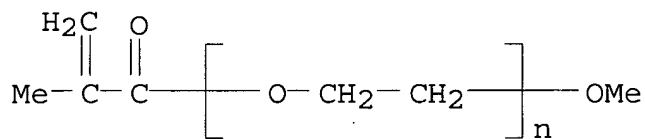
CRN 142-90-5  
CMF C16 H30 O2



RN 90692-09-4 HCA  
CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with  
.alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

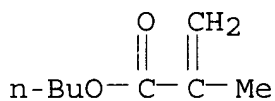
CM 1

CRN 26915-72-0  
CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
CCI PMS



CM 2

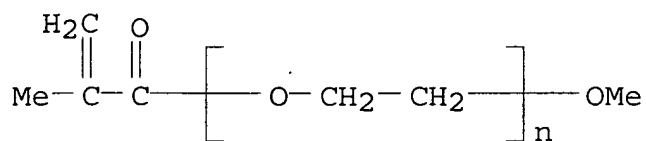
CRN 97-88-1  
CMF C8 H14 O2



RN 97008-70-3 HCA  
CN 2-Propenoic acid, 2-methyl-, hexyl ester, polymer with  
.alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

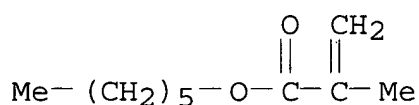
CRN 26915-72-0  
CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
CCI PMS



CM 2

CRN 142-09-6

CMF C10 H18 O2



RN 147488-68-4 HCA

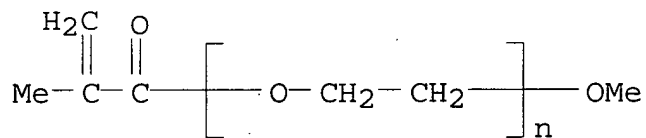
CN 2-Propenoic acid, 2-methyl-, hexadecyl ester, polymer with  
 .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2

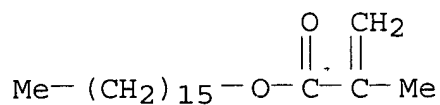
CCI PMS



CM 2

CRN 2495-27-4

CMF C20 H38 O2

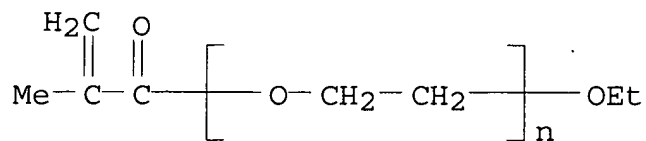


RN 288570-50-3 HCA

CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with  
 .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-ethoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

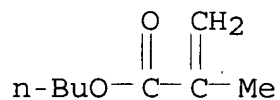
CM 1

CRN 35625-93-5  
 CMF (C2 H4 O)<sub>n</sub> C6 H10 O2  
 CCI PMS



CM 2

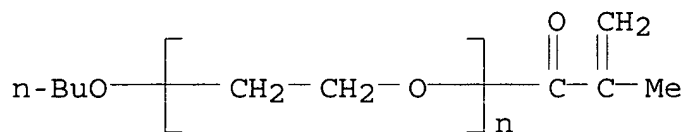
CRN 97-88-1  
 CMF C8 H14 O2



RN 288570-51-4 HCA  
 CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with  
 .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-butoxypoly(oxy-1,2-  
 ethanediyl) (9CI) (CA INDEX NAME)

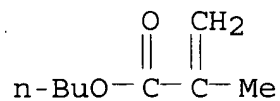
CM 1

CRN 51053-34-0  
 CMF (C2 H4 O)<sub>n</sub> C8 H14 O2  
 CCI PMS



CM 2

CRN 97-88-1  
 CMF C8 H14 O2



RN 288570-52-5 HCA  
 CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with

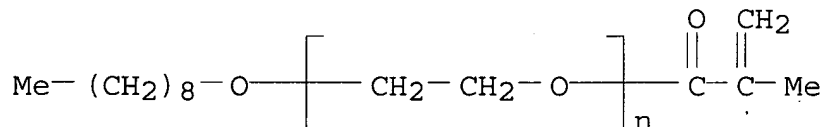
.alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-(nonyloxy)poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 36731-60-9

CMF (C2 H4 O)<sub>n</sub> C13 H24 O2

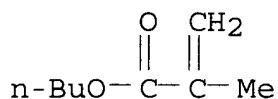
CCI PMS



CM 2

CRN 97-88-1

CMF C8 H14 O2



RN 288570-53-6 HCA

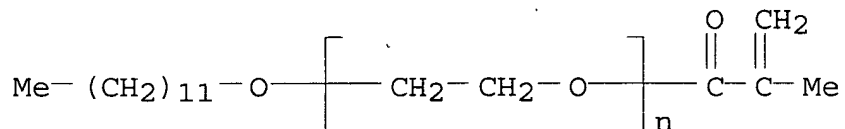
CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with  
.alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-(dodecyloxy)poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 50977-30-5

CMF (C2 H4 O)<sub>n</sub> C16 H30 O2

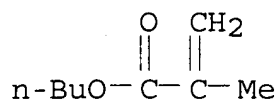
CCI PMS



CM 2

CRN 97-88-1

CMF C8 H14 O2



RN 288570-54-7 HCA

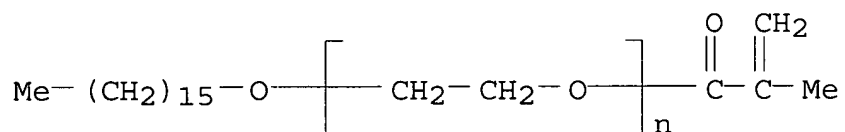
CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with  
 .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-(hexadecyloxy)poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 75819-41-9

CMF (C2 H4 O)<sub>n</sub> C20 H38 O2

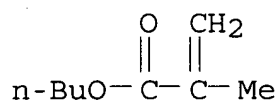
CCI PMS



CM 2

CRN 97-88-1

CMF C8 H14 O2



RN 288570-55-8 HCA

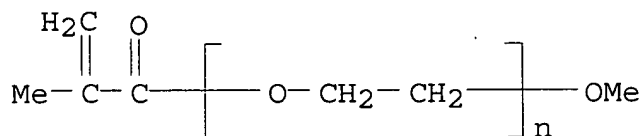
CN 2-Propenoic acid, 2-methyl-, decyl ester, polymer with  
 .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

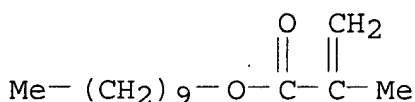
CCI PMS



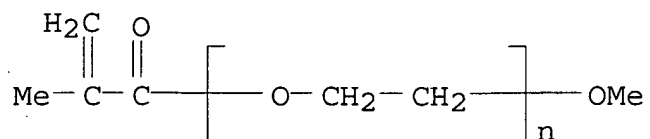


CM 2

CRN 3179-47-3  
CMF C14 H26 O2

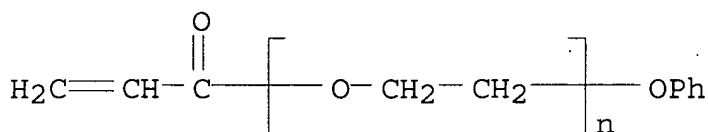


- IC ICM H01M010-40  
ICS H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **battery** methacrylate copolymer electrolyte manuf; ethylene glycol methacrylate copolymer **battery** electrolyte manuf; alkyl methacrylate copolymer **battery** electrolyte manuf
- IT **Battery** electrolytes  
(compns. and manuf. of polymer electrolytes contg. in situ polyimd. methacrylate copolymer for secondary **lithium batteries**)
- IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate 14283-07-9, **Lithium** fluoroborate 21324-40-3, **Lithium** hexafluorophosphate 74418-73-8  
90076-65-6 90692-09-4 97008-70-3 119229-99-1  
132843-44-8 147488-68-4 189217-59-2 288570-49-0  
288570-50-3 288570-51-4 288570-52-5  
288570-53-6 288570-54-7 288570-55-8  
(compns. and manuf. of polymer electrolytes contg. in situ polyimd. methacrylate copolymer for secondary **lithium batteries**)
- L65 ANSWER 4 OF 10 HCA COPYRIGHT 2003 ACS on STN
- 132:336901 Secondary **lithium** ion **battery** using polymer film. Hamano, Hiroshi; Hiroi, Osamu; Yoshida, Ikuhiro; Yoshioka, Shoji; Shioda, Hisashi; Kise, Makiko; Aihara, Shigeru; Takemura, Daigo; Arakane, Atsushi; Urushihata, Hiroaki; Kakuta, Makoto (Mitsubishi Electric Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2000133220 A2 20000512, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-307217 19981028.
- AB The **battery** has a polymer film between **electrodes** and a bag-like outer case, and the film is **sticked** to the **electrodes**. The film prevents deformation or breakage of the outer case caused by gas evolution.
- IT 26915-72-0DP, Polyethylene glycol monomethyl ether methacrylate, polymers 56641-05-5P  
(**Li** ion **battery** using polymer film for prevention of deformation or breakage of bag-like outer case)
- RN 26915-72-0 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxy- (9CI) (CA INDEX NAME)



RN 56641-05-5 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-phenoxy-  
(9CI) (CA INDEX NAME)



IC ICM H01M002-08

ICS H01M002-02; H01M010-40; H01M004-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST **lithium battery** deformation prevention polymer  
film

IT Polyureas

(**Li ion battery** using polymer film for  
prevention of deformation or breakage of bag-like outer case)

IT Polyoxyalkylenes, uses

Polyoxyalkylenes, uses

(acrylic-polyester-; **Li ion battery** using  
polymer film for prevention of deformation or breakage of  
bag-like outer case)

IT Polyesters, uses

Polyesters, uses

(acrylic-polyoxyalkylene-; **Li ion battery**  
using polymer film for prevention of deformation or breakage of  
bag-like outer case)

IT Polyoxyalkylenes, uses

(diol or triol derivs., polymers with MDI; **Li ion**  
**battery** using polymer film for prevention of deformation  
or breakage of bag-like outer case)

IT Secondary **batteries**

(**lithium**; **Li ion battery** using  
polymer film for prevention of deformation or breakage of  
bag-like outer case)

IT Polyurethanes, uses

(polyoxyalkylene-; **Li ion battery** using  
polymer film for prevention of deformation or breakage of  
bag-like outer case)

IT 101-68-8DP, MDI, polymers with polypropylene glycol diol or triol  
derivs. 25322-69-4DP, Polypropylene glycol, diol or triol derivs.,  
polymers with MDI 25766-14-7P, Ethylene oxide-MDI-propylene oxide  
copolymer 25852-47-5DP, Polyethylene glycol dimethacrylate,

polymers 26570-48-9DP, Polyethylene glycol diacrylate, polymers  
**26915-72-0DP**, Polyethylene glycol monomethyl ether  
 methacrylate, polymers 28410-01-7P 37278-61-8P, MDI-polyethylene  
 glycol copolymer 48067-72-7DP, Triethylene glycol monomethyl ether  
 acrylate, polymers **56641-05-5P** 74774-29-1P

(Li ion **battery** using polymer film for  
 prevention of deformation or breakage of bag-like outer case)

L65 ANSWER 5 OF 10 HCA COPYRIGHT 2003 ACS on STN

130:284504 Solid polymer electrolyte useful in small rechargeable  
**batteries**. Lafleur, Edward Ewart (Rohm and Haas Company,  
 USA). U.S. US 5897974 A 19990427, 7 pp. (English). CODEN:  
 USXXAM. APPLICATION: US 1997-873406 19970612.

AB A miscible blend of two acrylic polymers, one of which contains a  
 poly(1,2-alkyleneoxy) side chain, with a sol. **lithium** salt  
 yields a conducting polymer system useful in small rechargeable  
**batteries** without the need for volatile polar solvents. By  
 employing one polymer with a glass temp. below 35.degree. in  
 conjunction with control of mol. wt. of both components, a flexible  
 film may be formed by conventional thermoplastic methods. The  
 conductive salt, preferably LiN(CF<sub>3</sub>SO<sub>2</sub>)<sub>2</sub>, may be incorporated during  
 the polymn. which forms the acrylic polymers.

IT **97008-71-4P**, Acrylic acid ethyl ester-Methoxy polyethylene  
 glycol monomethacrylate copolymer  
 (solid polymer electrolyte useful in small rechargeable  
**batteries**)

RN 97008-71-4 HCA

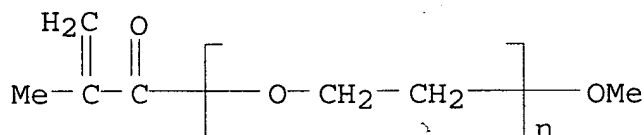
CN 2-Propenoic acid, ethyl ester, polymer with .alpha.-(2-methyl-1-oxo-  
 2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX  
 NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

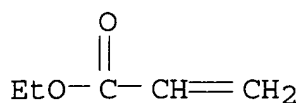
CCI PMS



CM 2

CRN 140-88-5

CMF C5 H8 O2



- IC ICM H01M006-18  
 NCL 429192000  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38  
 ST polymer electrolyte secondary **battery**  
 IT Polymerization  
 (bulk; solid polymer electrolyte useful in small rechargeable  
**batteries**)  
 IT Polymerization  
 (emulsion; solid polymer electrolyte useful in small rechargeable  
**batteries**)  
 IT **Battery** electrolytes  
 Conducting polymers  
 Secondary **batteries**  
 Solid electrolytes  
 (solid polymer electrolyte useful in small rechargeable  
**batteries**)  
 IT Acrylic polymers, uses  
 (solid polymer electrolyte useful in small rechargeable  
**batteries**)  
 IT 222984-29-4, Acrylic acid ethyl ester-polyethylene glycol methyl  
 ether-polyethylene glycol methacrylate copolymer  
 (solid polymer electrolyte useful in small rechargeable  
**batteries**)  
 IT 88446-64-4P, Acrylic acid ethyl ester-Methoxy polyethylene glycol  
 monomethacrylate-methyl methacrylate copolymer **97008-71-4P**  
 , Acrylic acid ethyl ester-Methoxy polyethylene glycol  
 monomethacrylate copolymer  
 (solid polymer electrolyte useful in small rechargeable  
**batteries**)  
 IT 7791-03-9, **Lithium** perchlorate 21324-40-3,  
**Lithium** hexafluorophosphate 33454-82-9, **Lithium**  
 triflate 90076-65-6, **Lithium**  
 bis(trifluoromethanesulfonyl)imide  
 (solid polymer electrolyte useful in small rechargeable  
**batteries**)  
 IT 140-88-5 9004-74-4 25249-16-5, Polyethylene glycol  
 monomethacrylate 26915-72-0  
 (solid polymer electrolyte useful in small rechargeable  
**batteries**)  
 IT 112-55-0, n-Dodecylmercaptan 2094-98-6, 1,1'-  
 Azobis(cyclohexanecarbonitrile)  
 (solid polymer electrolyte useful in small rechargeable  
**batteries**)

129:262782 Secondary **lithium-ion battery** and its fabrication. Hamano, Kouji; Tsunoda, Sei; Yoshida, Yasuhiro; Murai, Michio; Inuzuka, Takayuki; Aihara, Shigeru; Shiota, Hisashi (Mitsubishi Denki K. K., Japan). Eur. Pat. Appl. EP 866511 A2 19980923, 17 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-101382 19980127. PRIORITY: JP 1997-13932 19970128; JP 1997-292438 19971024.

AB A thin-type title **battery** having excellent safety and charge-discharge properties comprises a **cathode**, an **anode**, a separator retaining an electrolyte, and an **adhesive** resin layer connecting the **cathode** and the **anode** to the separator. The **adhesive** resin layer comprises a PVDF and an ionically-conducting polymer.

IT **213551-46-3**  
(in prepn. of **adhesive** for secondary **lithium-ion battery**)

RN 213551-46-3 HCA

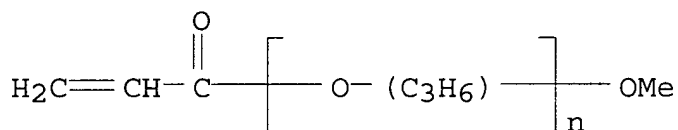
CN Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 83844-54-6

CMF (C3 H6 O)<sub>n</sub> C4 H6 O2

CCI IDS, PMS



IC ICM H01M010-40  
ICS H01M002-16

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST **lithium ion battery** fabrication;  
**adhesive** PVDF **lithium ion battery**;  
polymer ionically conducting **adhesive lithium battery**; safety **lithium ion battery**

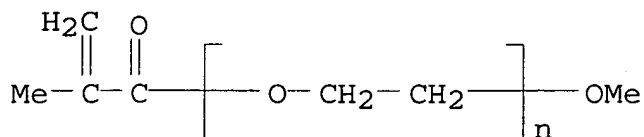
IT Polyoxyalkylenes, uses  
(acrylate-terminated, polymers; in prepn. of **adhesive** for secondary **lithium-ion battery**)

IT Polymer blends  
(**adhesives** for **lithium-ion batteries**)

IT Fluoropolymers, uses  
Polyoxyalkylenes, uses  
(in prepn. of **adhesive** for secondary **lithium-ion battery**)

IT Secondary **batteries**

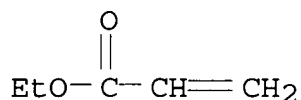
- (**lithium, lithium-ion; adhesive** for and fabrication of)
- IT 872-50-4, uses 9003-32-1, Poly(ethyl acrylate) 9011-14-7, Poly(methyl methacrylate) 9016-69-7, Polyethylene glycol monomethacrylate homopolymer 24937-79-9, PVDF 25322-68-3 25322-69-4 **213551-46-3**  
(in prepn. of **adhesive** for secondary **lithium-ion battery**)
- IT 25249-16-5P, Poly(2-hydroxyethyl methacrylate) 26022-14-0P, Poly(2-hydroxyethyl acrylate)  
(in prepn. of **adhesive** for secondary **lithium-ion battery**)
- IT 25249-16-5P, Poly(2-hydroxyethyl methacrylate) 26022-14-0P, Poly(2-hydroxyethyl acrylate)  
(in prepn. of **adhesive** for secondary **lithium-ion battery**)
- L65 ANSWER 7 OF 10 HCA COPYRIGHT 2003 ACS on STN  
128:211785 Solid polymeric electrolyte. La Fleur, Edward Ewart (Rohm and Haas Co., USA). Eur. Pat. Appl. EP 825619 A2 19980225, 9 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1997-305441 19970721. PRIORITY: US 1996-22544 19960723.
- AB A miscible blend of 2 acrylic polymers, 1 of which contains a poly(1,2-alkyleneoxy) side chain, with a sol. **Li** salt yields a conducting polymer system useful in small rechargeable **batteries** without the need for volatile polar solvents. By employing 1 polymer with a glass temp. below -35.degree., in conjunction with control of the mol. wts. of both components, a flexible film may be formed by conventional thermoplastic methods. The conductive salt, preferably LiN(CF<sub>3</sub>SO<sub>2</sub>)<sub>2</sub> or LiClO<sub>4</sub>, may be incorporated during the polymn. which forms the acrylic polymers.
- IT **97008-71-4**, Ethyl acrylate-polyethylene glycol methyl ether methacrylate copolymer  
(blends with Et acrylate-Me methacrylate copolymer; solid electrolytes from **lithium** salt-contg.)
- RN 97008-71-4 HCA  
CN 2-Propenoic acid, ethyl ester, polymer with .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)
- CM 1
- CRN 26915-72-0  
CMF (C2 H4 O)<sub>n</sub> C5 H8 O2  
CCI PMS



CM 2

CRN 140-88-5

CMF C5 H8 O2



IC ICM H01B001-12

ICS H01M006-18

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 35, 38, 52

ST acrylic polymer solid electrolyte; rechargeable **battery**acrylic polymer solid electrolyte; **lithium** salt acrylic polymer solid electrolyte

IT Solid electrolytes

(from acrylic polymers and **lithium** salts)

IT Conducting polymers

(solid electrolytes from acrylic polymers and **lithium** salts)IT Solid state secondary **batteries**(solid electrolytes from acrylic polymers and **lithium** salts for)

IT Acrylic polymers, uses

(solid electrolytes from **lithium** salts and)

IT 97008-71-4, Ethyl acrylate-polyethylene glycol methyl ether

methacrylate copolymer 202406-21-1, Ethyl acrylate-polypropylene glycol monomethacrylate copolymer

(blends with Et acrylate-Me methacrylate copolymer; solid electrolytes from **lithium** salt-contg.)

IT 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer

(blends with Et acrylate-polyethylene glycol Me ether methacrylate copolymer; solid electrolytes from **lithium** salt-contg.)IT 7791-03-9, **Lithium** perchlorate (LiClO<sub>4</sub>) 14283-07-921324-40-3, **Lithium** hexafluorophosphate (LiPF<sub>6</sub>)

33454-82-9 90076-65-6

(solid electrolytes from acrylic polymers contg.)

L65 ANSWER 8 OF 10 HCA COPYRIGHT 2003 ACS on STN

126:266268 New polymer electrolyte for solid state **lithium****batteries**. Gnanaraj, J. S.; Karekar, R. N.; Skaria, Sunny;

Ponrathnam, S. (Dep. Physics, Univ. Pune, Pune, 411 007, India).  
Bulletin of Electrochemistry, 12(11-12), 738-742 (English) 1996.  
CODEN: BUELE6. ISSN: 0256-1654. Publisher: Central Electrochemical  
Research Institute.

- AB Poly (ethylene glycol) Et ether polymethacrylate (PEGEEP) having hydrophobic alkyl chains in the backbone and hydrophilic ethylene oxide (MW = 246) in the side chain was prepd. from the macromer poly(ethylene glycol) Et ether methacrylate (PEGEEM) by soln. polymn. in toluene at 338 K. In order to increase hydrophobicity, copolymers of PEGEEM were synthesized with Me methacrylate (MMA) in varying proportions 25 to 60 mol% PEGEEM. Hybrid (polyblend) films of **lithium** salt (LiClO<sub>4</sub>) complexed with blends of PEGEEP homo and PEGEEM copolymers were prepd. with poly (ethylene oxide), MW 400,000, in acetonitrile by soln.- cast technique. The electrolyte gives cond. of 1.1 .times. 10<sup>-6</sup> S cm<sup>-1</sup> at room temp., which is quite promising.
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST polymer electrolyte solid state **lithium battery**
- IT Polyoxyalkylenes, uses  
(**lithium** complex, electrolyte; new polymer electrolyte for solid state **lithium batteries**)
- IT **Battery** electrolytes  
(new polymer electrolyte for solid state **lithium batteries**)
- IT Polymer blends  
(new polymer electrolyte for solid state **lithium batteries**)
- IT 7791-03-9, **Lithium** perchlorate  
(electrolyte contg.; new polymer electrolyte for solid state **lithium batteries**)
- IT 7439-93-2D, **Lithium**, polyethylene oxide complex, uses  
25322-68-3D, **lithium** complex 35625-93-5  
(electrolyte; new polymer electrolyte for solid state **lithium batteries**)
- IT 188831-48-3 188858-26-6  
(new polymer electrolyte for solid state **lithium batteries**)

L65 ANSWER 9 OF 10 HCA COPYRIGHT 2003 ACS on STN

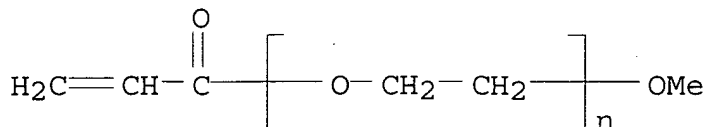
122:244121 **Lithium batteries** containing ion conductive polymers. Takeda, Kazunari; Inamasu, Tokuo; Murata, Kazuo (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07014608 A2 19950117 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-179892 19930624.

- AB The **batteries** have a **Li** or **Li** alloy **anode**, a **cathode**, and an ion conductive polymer contg. .gtoreq.1 ionic compd. dissolved in a polymer; where the conductive polymer forms .gtoreq.2 layers with .gtoreq.1 layer contg. a powd. carbonaceous material. The polymer is preferably a crosslinked network of an org. compd. having reactive double **bond**, an ionic compd., an org. sol. for the ionic compd.,



and a high mol. wt. poly(ethylene oxide) or ethylene oxide-propylene oxide copolymer.

IT 32171-39-4  
(ion conductive polymers for **lithium batteries**)  
RN 32171-39-4 HCA  
CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
ST **lithium battery** ion conductive polymer  
IT **Batteries**, secondary  
(**lithium batteries** contg. ion conductive polymers)  
IT **Cathodes**  
(**battery, lithium batteries** with **cathodes** contg. ion conductive polymers)  
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate  
26570-48-9 29935-35-1, **Lithium** hexafluoroarsenate  
32171-39-4  
(ion conductive polymers for **lithium batteries**)  
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate  
26570-48-9 29935-35-1, **Lithium** hexafluoroarsenate  
32171-39-4  
(ion conductive polymers for **lithium batteries**)

L65 ANSWER 10 OF 10 HCA COPYRIGHT 2003 ACS on STN

117:11446 Nonflowing polymeric electrolytes. Nakanaga, Takefumi; Inubushi, Akiyoshi; Tada, Yuji; Kameshima, Takashi; Taniguchi, Masatoshi; Hayakawa, Takumi; Komaki, Akio (Otsuka Chemical Co., Ltd., Japan; Shin-Kobe Electric Machinery Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 04008735 A2 19920113 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-112467 19900426.

AB The electrolytes contain a **Li** salt and a polyphosphazine which contains randomly arranged segments selected from I-VI (M = monovalent element, e.g., **Li**, Na, K, Cu, Ag, and H; h .ltoreq.22.5; k .ltoreq.15; l, m, and n are integers; and 3.ltoeq. 1 + m + n .ltoreq.20,000) and may be mixed with polyalkylene oxides, poly(olegoalkylene oxide methacrylates), polyesters, polyimides, or polyacetals. The electrolytes are useful for **batteries**, capacitors, and electrochromic devices.

IC ICM C08G079-02  
ICS C08L085-02; G09G003-16; H01B001-06; H01G009-00; H01G009-02;

H01M006-18; H01M008-10; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST **lithium** salt polyphosphazine **battery** electrolyte

IT Polyesters, uses  
Polyimides, uses  
Polyoxyalkylenes, uses  
(electrolytes contg., **lithium** salt-polyphosphazine, for  
**batteries** and capacitors and electrochromic devices)

IT Electric capacitors  
(electrolytes for, **lithium** salt-polyphosphazine)

IT **Battery** electrolytes  
(**lithium** salt-polyphosphazine)

IT Phosphazines  
(polymers with PEO, graft, electrolytes contg. **lithium**  
salts and, for **batteries** and capacitors and  
electrochromic devices)

IT Optical imaging devices  
(electrochromic, electrolytes for, **lithium**  
salt-polyphosphazine)

IT Acetals  
(poly-, electrolytes contg., **lithium**  
salt-polyphosphazine, for **batteries** and capacitors and  
electrochromic devices)

IT 7791-03-9, **Lithium** perchlorate  
(electrolytes contg. PEO-grafted phosphazines and, for  
**batteries** and capacitors and electrochromic devices)

IT 7439-93-2D, **Lithium**, salts  
(electrolytes contg. polyphosphazines and, for **batteries**  
and capacitors and electrochromic devices)

IT 25322-69-4, Poly(propylene glycol) **90692-09-4**  
(electrolytes contg., **lithium** salt-polyphosphazine, for  
**batteries** and capacitors and electrochromic devices)

RN **90692-09-4** REGISTRY

CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with  
.alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxypoly(oxy-1,2-  
ethanediyl) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-  
.omega.-methoxy-, polymer with butyl 2-methyl-2-propenoate (9CI)

OTHER NAMES:

CN Butyl methacrylate-polyethylene glycol monomethyl ether methacrylate  
copolymer

MF (C8 H14 O2 . (C2 H4 O)n C5 H8 O2)x

CI PMS

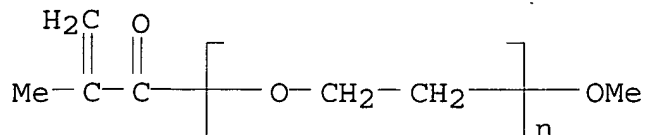
PCT Polyacrylic, Polyether

LC STN Files: CA, CAPLUS; TOXCENTER, USPATFULL

CM 1

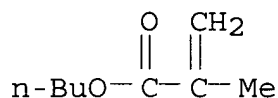
CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2  
CCI PMS



CM 2

CRN 97-88-1  
CMF C8 H14 O2



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L68 ANSWER 1 OF 2 HCA COPYRIGHT 2003 ACS on STN

116:259053 Secondary **batteries** with coated **anodes**.

Nakane, Ikuro; Fujita, Yasuhiro; Furukawa, Sanehiro (Sanyo Electric Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04028172 A2 19920130 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-131673 19900522.

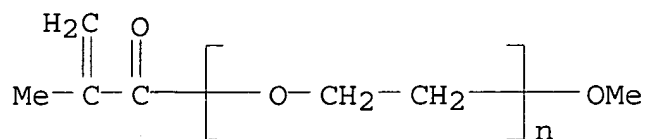
AB The **batteries** use MnO<sub>2</sub>, MoO<sub>3</sub>, V<sub>2</sub>O<sub>5</sub>, or TiS<sub>2</sub> **cathodes** and alkali metal (e.g., Li), alk. earth metal, or Al **anodes**, which are coated with a 1st protective layer and an elastomer-, conducting polymer-, or ion-conductive polymer-based layer. The 1st layer may be salts, oxides, or hydroxides of alkali or alk. earth metals or compds. of P, As, Sb, and/or Bi, the elastomer may be ethylene-propylene or ethylene-propylene-nonconjugated diene copolymers, the conducting polymer may be poly(p-phenylene), polyacetylene, polyaniline, polypyrrole, etc., and the ion-conductive polymer may be PEO or other polymers contg. **dispersed Li** salts. These **batteries** have long cycle life.

IT 26915-72-0

(**anodes** with coatings contg., lithium, for secondary **batteries**)

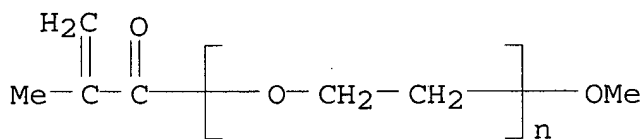
RN 26915-72-0 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxy- (9CI) (CA INDEX NAME)



- IC ICM H01M010-40  
ICS H01M004-02
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST polymer coating **lithium battery anode**;  
phosphorus pentachloride coating **lithium anode**;  
magnesia coating **lithium anode**
- IT Rubber, synthetic  
(EPDM, **anodes** with coatings contg., **lithium**,  
for secondary **batteries**)
- IT **Anodes**  
(**battery**, **lithium**, coated, for long cycle  
life)
- IT 7791-03-9, **Lithium** perchlorate  
(PEO contg. **dispersed**, **anodes** with coatings  
contg., **lithium**, for secondary **batteries**)
- IT 513-77-9, Barium carbonate 1309-48-4, Magnesia, uses 1310-65-2,  
**Lithium** hydroxide 9003-39-8, Polyvinylpyrrolidone  
9010-79-1, Ethylene-propylene copolymer 10026-13-8, Phosphorus  
pentachloride 14283-07-9, **Lithium** fluoroborate  
24937-79-9, Poly(vinylidene fluoride) 25014-41-9,  
Polyacrylonitrile 25067-54-3, Polyfuran 25067-58-7,  
Polyacetylene 25190-62-9, Poly(p-phenylene) 25212-74-2,  
Poly(p-phenylenesulfide) 25233-30-1, Polyaniline 25233-34-5,  
Polythiophene 25322-69-4, Poly(propylene oxide) 26009-24-5,  
Poly(p-phenylenevinylene) 26499-97-8, Poly(1,3-phenylene)  
**26915-72-0** 29935-35-1, **Lithium**  
hexafluoroarsenate 30604-81-0, Polypyrrole 31691-80-2,  
Poly(thio[1,1'-biphenyl]-4,4'-diyl) 32027-35-3,  
Poly(m-phenylenesulfide) 33454-82-9, **Lithium**  
trifluoromethanesulfonate 51555-21-6, Polycarbazole 75788-67-9,  
Polyphenothiazine 102250-99-7 114503-66-1  
(**anodes** with coatings contg., **lithium**, for  
secondary **batteries**)
- IT 7439-93-2, **Lithium**, uses  
(**anodes**, coated, for secondary **batteries**, for  
long cycle life)
- IT 25322-68-3, PEO  
(**lithium** perchlorate-**dispersed**,  
**anodes** with coatings contg., **lithium**, for  
secondary **batteries**)
- IT 25322-68-3, PEO  
(**lithium** perchlorate-**dispersed**,  
**anodes** with coatings contg., **lithium**, for  
secondary **batteries**)

- L68 ANSWER 2 OF 2 HCA COPYRIGHT 2003 ACS on STN  
 111:236627 Laminar primary **batteries**. Fujiwara, Yasuo (Kimoto and Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01130473 A2 19890523. Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-286922 19871113.
- AB An insulator is covered with successive layers of a **cathode** collector, a **cathode**-active mass, a polymer solid electrolyte, and a metal film to obtain a laminar primary **battery**. The insulator can be a flexible film or sheet; the **cathode** collector a C powder, carbon-fiber, graphite-polymer, metal oxide, or metal oxide-polymer layer; the **cathode**-active mass is preferably MnO<sub>2</sub> **dispersed** in a polymer; the electrolyte preferably a mixt. of an amorphous polymer and an alkali metal salt, esp., Li salt; and the metal film has a thickness >1000 .ANG..
- IT 26915-72-0D, **lithium** complexes  
 (electrolyte, for laminar primary aluminum-manganese dioxide **batteries**)
- RN 26915-72-0 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxy- (9CI) (CA INDEX NAME)

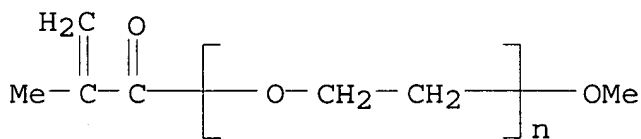


- IC ICM H01M006-18  
 ICS H01M004-06
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST laminar primary **battery**; manganese dioxide metal laminar **battery**
- IT **Batteries**, primary  
 (aluminum/**lithium** perchlorate-polymer/manganese dioxide, laminar)
- IT Carbon black, uses and miscellaneous  
 Carbon fibers, uses and miscellaneous  
 (**cathode** current collectors, for laminar primary aluminum-manganese dioxide **batteries**)
- IT Polyesters, uses and miscellaneous  
 (films, as substrates for laminar primary aluminum-manganese dioxide **batteries**)
- IT 7429-90-5, Aluminum, uses and miscellaneous  
 (**anodes**, vacuum vapor-deposited, for laminar primary **batteries**)
- IT 7440-44-0  
 (carbon fibers, **cathode** current collectors, for laminar primary aluminum-manganese dioxide **batteries**)
- IT 7440-44-0, Carbon, uses and miscellaneous 7782-42-5, Graphite, uses and miscellaneous 50926-11-9, ITO  
 (**cathode** current collectors, for laminar primary

- aluminum-manganese dioxide **batteries**)
- IT 1313-13-9, Manganese dioxide, uses and miscellaneous  
(**cathodes**, for laminar primary **batteries**)
- IT 26915-72-0D, **lithium** complexes 45103-58-0D,  
**lithium** complexes  
(electrolyte, for laminar primary aluminum-manganese dioxide  
**batteries**)
- IT 7791-03-9, **Lithium** perchlorate  
(electrolytes contg. polymers and, for laminar primary  
aluminum-manganese dioxide **batteries**)
- IT 7439-93-2D, **Lithium**, complexes with polymers  
25322-68-3D, PEO, **lithium** complexes  
(electrolytes, for laminar primary aluminum-manganese dioxide  
**batteries**)

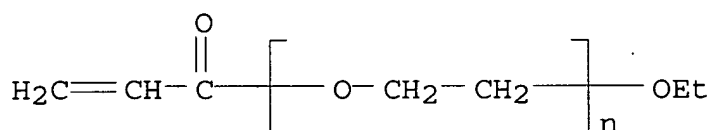
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- L71 ANSWER 1 OF 28 HCA COPYRIGHT 2003 ACS on STN
- 134:298395 Grafted graphite **anode** material and secondary  
**lithium** ion **battery** using it. Ohara, Hidehiko;  
Watanabe, Kenji (Mitsubishi Chemical Corp., Japan). Jpn. Kokai  
Tokkyo Koho JP 2001110407 A2 20010420, 7 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1999-283892 19991005.
- AB The **anode** material is a grafted material, obtained from a  
Li-intercalating simple substance or compd. by contacting  
with a fluorination agent and then reacting with a polymg. org.  
substance, organometallic compd., org. electrolyte, and/or inorg.  
electrolyte, showing Ar laser Raman spectrum peak intensities (IA)  
and (IB) at 1570-1620 cm<sup>-1</sup> and 1350-1370-1, resp., to give R value  
(IB/IA) 0.18-2.00. A secondary Li ion **battery**  
equipped with the **anode** material is also claimed. Thus,  
graphite was fluorinated with F<sub>2</sub> and then reacted with  
methoxypolyethylene glycol methacrylate to give an **anode**  
material showing R value 0.39, and a secondary **battery**  
using the material showed high capacity and high-temp. stability.
- IT 26915-72-0DP, Methoxypolyethylene glycol methacrylate,  
grafted products with graphite  
(acrylate polymer-grafted graphite **anode** for  
**lithium** ion **battery**)
- RN 26915-72-0 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-  
.omega.-methoxy- (9CI) (CA INDEX NAME)



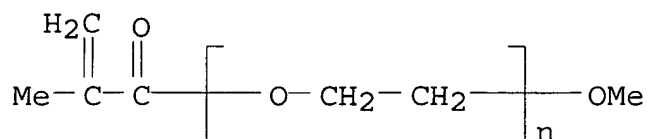
- IC ICM H01M004-02  
ICS H01M004-58; H01M010-40

- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **anode** graphite graft polyoxyethylene acrylate  
**lithium battery**; Raman spectrometry graphite graft  
polyoxyethylene acrylate **anode**
- IT **Battery anodes**  
(acrylic polymer-grafted graphite **anode** for  
**lithium ion battery**)
- IT Secondary **batteries**  
(**lithium**; acrylic polymer-grafted graphite  
**anode** for **lithium ion battery**)
- IT 7782-42-5DP, Graphite, grafted products with polyoxyethylene  
methacrylate, uses **26915-72-0DP**, Methoxypolyethylene  
glycol methacrylate, grafted products with graphite  
(acrylate polymer-grafted graphite **anode** for  
**lithium ion battery**)
- IT 7782-42-5DP, Graphite, grafted products with polyoxyethylene  
methacrylate, uses **26915-72-0DP**, Methoxypolyethylene  
glycol methacrylate, grafted products with graphite  
(acrylate polymer-grafted graphite **anode** for  
**lithium ion battery**)
- L71 ANSWER 2 OF 28 HCA COPYRIGHT 2003 ACS on STN
- 134:268782 Secondary gel polymer electrolyte **battery**. Kanno,  
Maruo; Oshita, Ryuji (Sanyo Electric Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2001093574 A2 20010406, 5 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1999-268140 19990922.
- AB The **batteries** have **cathodes** using Al collectors,  
**anodes**, and a gel polymer electrolyte impregnated with a  
nonaq. soln. of a (RSO<sub>2</sub>)<sub>n</sub>XLi (S = N or C, n =2 when X = N, n =3 when  
X = C, R = CF<sub>3</sub>, C<sub>2</sub>F<sub>5</sub>, C<sub>3</sub>F<sub>7</sub>, or C<sub>4</sub>F<sub>9</sub>) electrolyte serving as  
separator; where the electrolyte soln. also contains trialkyl  
phosphate esters.
- IT **92138-94-8**  
(gel polymer electrolytes/separators contg. nonaq.  
**lithium** salt electrolyte solns. and trialkyl phosphate  
for secondary **lithium batteries**)
- RN 92138-94-8 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-ethoxy-  
, homopolymer (9CI) (CA INDEX NAME)
- CM 1
- CRN 35111-38-7
- CMF (C2 H4 O)<sub>n</sub> C5 H8 O2
- CCI PMS



IC ICM H01M010-40  
ICS H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
ST secondary **lithium battery** gel polymer  
electrolyte trialkyl phosphate; separator gel polymer electrolyte  
secondary **lithium battery**  
IT **Battery** electrolytes  
(gel polymer electrolytes/separators contg. nonaq.  
**lithium** salt electrolyte solns. and trialkyl phosphate  
for secondary **lithium batteries**)  
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
90076-65-6 **92138-94-8** 119229-99-1 132843-44-8  
176719-70-3 189217-59-2 210406-61-4  
(gel polymer electrolytes/separators contg. nonaq.  
**lithium** salt electrolyte solns. and trialkyl phosphate  
for secondary **lithium batteries**)  
IT 78-40-0, Triethyl phosphate 126-73-8, Tri(n-butyl)phosphate, uses  
512-56-1, Trimethyl phosphate  
(gel polymer electrolytes/separators contg. nonaq.  
**lithium** salt electrolyte solns. and trialkyl phosphate  
for secondary **lithium batteries**)  
L71 ANSWER 3 OF 28 HCA COPYRIGHT 2003 ACS on STN  
134:165715 Press rubbing apparatus, method for coating with ion  
conducting polymers, and powdered materials. Sato, Takaya; Shimizu,  
Tatsuo (Nisshinbo Industries, Inc., Japan; Itochu Corporation). PCT  
Int. Appl. WO 2001013447 A1 20010222, 45 pp. DESIGNATED STATES: W:  
AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ,  
DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,  
JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,  
MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,  
TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD,  
RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES,  
FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD,  
TG. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP5397  
20000811. PRIORITY: JP 1999-262501 19990812.  
AB The app. have a container with a bottom for retaining a mixt. and a  
main blade movable along the bottom, to rub the mixt. between the  
bottom and the blade under pressure. Powd. materials are coated  
with ion conducting polymers by rubbing a powd. materials-polymer  
mixt. in the app. The coated powd. materials are useful for  
**electrodes** in secondary **batteries** and double layer  
capacitors.  
IT **26915-72-0D**, Methoxypolyethylene glycol methacrylate,  
polymer with cyanoethylated-dihydroxypropoxylate polyvinyl alc. and  
trimethylolpropane trimethacrylate  
(press rubbing app. coating powd. materials with ion conducting  
polymers for **electrodes** for **batteries** and  
double layer capacitors)  
RN 26915-72-0 HCA  
CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-  
.omega.-methoxy- (9CI) (CA INDEX NAME)





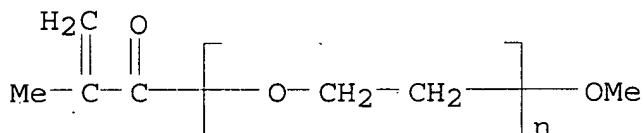
- IC ICM H01M004-58  
ICS H01M004-04; H01M010-40; B01F007-16; B01F007-26; H01G009-058;  
H01G013-00
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **battery electrode** ion conducting polymer coating  
powder; double layer capacitor **electrode** ion conducting  
polymer; rubbing coating ion conducting polymer powder manuf
- IT Capacitors  
(double layer; press rubbing app. coating powd. materials with  
ion conducting polymers for **electrodes** for  
**batteries** and double layer capacitors)
- IT **Battery electrodes**  
Coating apparatus  
(press rubbing app. coating powd. materials with ion conducting  
polymers for **electrodes** for **batteries** and  
double layer capacitors)
- IT 7782-42-5, Graphite, uses 12190-79-3, Cobalt lithium  
oxide (CoLiO<sub>2</sub>)  
(press rubbing app. coating powd. materials with ion conducting  
polymers for **electrodes** for **batteries** and  
double layer capacitors)
- IT 3290-92-4D, Trimethylolpropane trimethacrylate, polymer with  
cyanoethylated-dihydroxypropoxylate polyvinyl alc. and  
methoxypolyethylene glycol methacrylate 9002-89-5D, Polyvinyl  
alcohol, cyanoethylated-dihydroxypropoxylate, polymer with  
trimethylolpropane trimethacrylate and methoxypolyethylene glycol  
methacrylate 26915-72-0D, Methoxypolyethylene glycol  
methacrylate, polymer with cyanoethylated-dihydroxypropoxylate  
polyvinyl alc. and trimethylolpropane trimethacrylate  
133862-24-5D, reaction products with ethylene cyanohydrin  
(press rubbing app. coating powd. materials with ion conducting  
polymers for **electrodes** for **batteries** and  
double layer capacitors)

L71 ANSWER 4 OF 28 HCA COPYRIGHT 2003 ACS on STN

134:165713 **Electrodes**; secondary **batteries**, double  
layer capacitors, and manufacture of the **electrodes** and  
**batteries** and capacitors. Sato, Takaya; Shimizu, Tatsuo  
(Nisshinbo Industries, Inc., Japan; Itochu Corporation). PCT Int.  
Appl. WO 2001013444 A1 20010222, 43 pp. DESIGNATED STATES: W: AE,  
AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE,  
DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,  
MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,  
TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU,

TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP5396 20000811. PRIORITY: JP 1999-262502 19990812.

- AB The **electrodes** have an ion conducting polymer coated **electrode** active mass powder or large sp. surface powder, or a mixt. of the polymer with the **electrode** active mass powder or the large sp. surface powder, applied on a collector. The **batteries** and double layer capacitors use the **electrodes** for their **cathodes** and **anodes**, and have an ion conductive material between the **electrodes**. The **electrodes** and **batteries** and capacitors are prepd. by rubbing a mixt. of the polymer and the powd. material under pressure to obtain the polymer coated powder, and applying the coated powder on collectors.
- IT 26915-72-0D, Polyethylene glycol monomethyl ether methacrylate, polymers with trimethylolpropane trimethacrylate and cyanoethylated-dihydroxypropoxylated polyvinyl alc. (manuf. of **electrodes** contg. ion conducting polymer coated active mass and large sp. surface powders for **batteries** and double layer capacitors)
- RN 26915-72-0 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxy- (9CI) (CA INDEX NAME)



- IC ICM H01M004-02
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **battery electrode** ion conducting polymer coating powder; double layer capacitor **electrode** ion conductive polymer coating; pressurized rubbing ion conducting polymer coating **electrode** material manuf
- IT Capacitors (double layer; manuf. of **electrodes** contg. ion conducting polymer coated active mass and large sp. surface powders for double layer capacitors)
- IT **Battery electrodes** (manuf. of **electrodes** contg. ion conducting polymer coated active mass and large sp. surface powders for **batteries**)
- IT 7782-42-5, Graphite, uses 12190-79-3, Cobalt lithium oxide (CoLiO<sub>2</sub>) (manuf. of **electrodes** contg. ion conducting polymer coated active mass and large sp. surface powders for **batteries** and double layer capacitors)
- IT 3290-92-4D, Trimethylolpropane trimethacrylate, polymer with methoxypolyethylene glycol methacrylate and cyanoethylated-

dihydroxypropoxylated polyvinyl alc. 9002-89-5D, Polyvinyl alcohol, cynaoethylated, dihydroxypropoxylated, polymer with methoxypolyethyleneglyocol methacrylate and trimethylolpropanetrimethacrylate **26915-72-0D**, Polyethylene glycol monomethyl ether methacrylate, polymers with trimethylolpropane trimethacrylate and cyanoethylated-dihydroxypropoxylated polyvinyl alc. 133862-24-5D, reaction products with ethylene cyanohydrin (manuf. of **electrodes** contg. ion conducting polymer coated active mass and large sp. surface powders for **batteries** and double layer capacitors)

L71 ANSWER 5 OF 28 HCA COPYRIGHT 2003 ACS on STN

133:284171 Polyelectrolytic **battery** having a polyelectrolyte based on a polystyrene main chain and polyethylene oxide side chain. Kamino, Maruo; Uesugi, Makoto; Fujimoto, Masahisa; Nohma, Toshiyuki; Nishio, Koji (Sanyo Electric Co., Ltd., Japan). U.S. US 6132904 A 20001017, 14 pp. (English). CODEN: USXXAM. APPLICATION: US 1998-119608 19980722. PRIORITY: JP 1997-198029 19970724; JP 1998-15797 19980331.

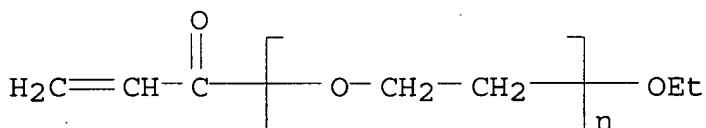
AB In a polyelectrolytic **battery**, a porous film having a polyelectrolyte impregnated into its cavities is interposed between a pos. **electrode** and a neg. **electrode**, the porous film having a porosity of not less than 80% and the polyelectrolyte impregnated therein at a ratio of 20 to 90% by vol. of the cavities thereof. Another polyelectrolytic **battery** includes a pos. **electrode**, a neg. **electrode** including a carbon material, and a polyelectrolytic film interposed between the pos. and neg. **electrodes**, the pos. and neg. **electrodes** each contg. a polyelectrolyte composed of a high polymer having a polystyrene main chain and a side chain of polyethylene oxide and a **lithium** salt.

IT **35111-38-7**

(polyelectrolytic **battery** having polyelectrolyte based on polystyrene main chain and polyethylene oxide side chain)

RN **35111-38-7** HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-ethoxy-(9CI) (CA INDEX NAME)



IC ICM H01M006-18

ICS H01M010-08

NCL 429306000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 38

ST **battery** electrolyte polystyrene polyethylene oxide

IT Secondary **batteries**

(**lithium**; polyelectrolytic **battery** having polyelectrolyte based on polystyrene main chain and polyethylene oxide side chain)

IT **Battery anodes**

**Battery cathodes**

**Battery electrolytes**

Polyelectrolytes

(polyelectrolytic **battery** having polyelectrolyte based on polystyrene main chain and polyethylene oxide side chain)

IT Carbonaceous materials (technological products)

Fluoropolymers, uses

Polyoxyalkylenes, uses

(polyelectrolytic **battery** having polyelectrolyte based on polystyrene main chain and polyethylene oxide side chain)

IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate 7782-42-5, Graphite, uses 7791-03-9, **Lithium** perchlorate 9003-53-6, Polystyrene 12031-65-1, **Lithium** nickel oxide linio2 12057-17-9, **Lithium** manganese oxide limn2o4 12190-79-3, Cobalt **lithium** oxide colio2 24937-79-9, PvdF 25267-79-2, Poly(oxyethylene)-polystyrene copolymer 25322-68-3, Peo 35111-38-7 101920-93-8, Cobalt **lithium** nickel oxide Co0.5LiNi0.5O2 107311-90-0, Ethylene oxide-styrene block copolymer 113066-89-0, Cobalt **lithium** nickel oxide Co0.2LiNi0.8O2 135573-53-4, Cobalt **lithium** nickel oxide Co0-1LiNi0-1O2

(polyelectrolytic **battery** having polyelectrolyte based on polystyrene main chain and polyethylene oxide side chain)

IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene (polyelectrolytic **battery** having polyelectrolyte based on polystyrene main chain and polyethylene oxide side chain)

IT 7440-44-0, Carbon, uses (polyelectrolytic **battery** having polyelectrolyte based on polystyrene main chain and polyethylene oxide side chain)

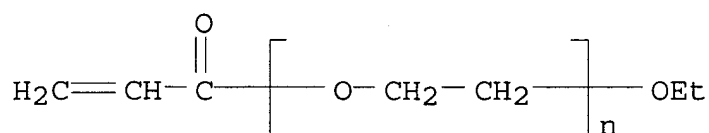
IT 75-05-8, Acetonitrile, uses 105-58-8, Diethyl carbonate 872-50-4, n-Methylpyrrolidone, uses (polyelectrolytic **battery** having polyelectrolyte based on polystyrene main chain and polyethylene oxide side chain)

L71 ANSWER 6 OF 28 HCA COPYRIGHT 2003 ACS on STN

132:52433 Secondary gelled polymer electrolyte **lithium batteries**. Kamino, Maruo; Ohshita, Ryuji; Nakajima, Hiroshi; Uesugi, Makoto; Nohma, Toshiyuki; Nishio, Koji (Sanyo Electric Co., Ltd., Japan). PCT Int. Appl. WO 2000001026 A1 20000106, 33 pp. DESIGNATED STATES: W: CA, JP, KR, US; RW: DE, FR, GB. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP3283 19990618. PRIORITY: JP 1998-196801 19980626; JP 1999-2640 19990108.

AB The **batteries** have a **cathode**, contg. a spinel type Li Mn oxide and a gelled polymer electrolyte, an **anode**, and a gelled polymer electrolyte-separator membrane; where the electrolytes in the **cathode** and the membrane are polyalkylene oxide type polymers impregnated with a liq. electrolyte.

- IT 35111-38-7  
 (compns. of gelled polymer electrolytes for secondary  
**lithium batteries**)  
 RN 35111-38-7 HCA  
 CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-ethoxy-  
 (9CI) (CA INDEX NAME)



- IC ICM H01M010-40  
 ICS H01M004-02; H01M004-58; H01M002-14  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST **lithium battery** electrolyte gelled polyalkylene  
 oxide  
 IT **Battery cathodes**  
 (cathodes contg. gelled polymer electrolytes for  
 secondary **lithium batteries**)  
 IT **Battery** electrolytes  
 (compns. of gelled polymer electrolytes for secondary  
**lithium batteries**)  
 IT Fluoropolymers, uses  
 (compns. of gelled polymer electrolytes for secondary  
**lithium batteries**)  
 IT Secondary batteries  
 (lithium; secondary **lithium batteries**  
 contg. **lithium** manganese oxide cathodes and  
 gelled polymer electrolytes)  
 IT 12057-17-9, **Lithium** manganese oxide (LiMn2O4)  
 61179-01-9, Aluminum **lithium** manganese oxide  
 130732-39-7, Cobalt **lithium** manganese oxide  
 (Co0.4LiMn1.6O4) 130811-81-3, **Lithium** manganese nickel  
 oxide (LiMn1.6Ni0.4O4) 136479-31-7, **Lithium** magnesium  
 manganese oxide (LiMg0.4Mn1.6O4) 143334-12-7, Iron **lithium**  
 manganese oxide (Fe0.4LiMn1.6O4)  
 (cathodes contg. gelled polymer electrolytes for  
 secondary **lithium batteries**)  
 IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate  
 7791-03-9 14283-07-9, **Lithium** fluoroborate 21324-40-3,  
**Lithium** hexafluorophosphate 24937-79-9, Poly(vinylidene  
 fluoride) 35111-38-7 90076-65-6 110351-66-1,  
 Ethylene-styrene block copolymer 119229-99-1 132843-44-8  
 176719-70-3 210406-62-5 252877-06-8  
 (compns. of gelled polymer electrolytes for secondary  
**lithium batteries**)

L71 ANSWER 7 OF 28 HCA COPYRIGHT 2003 ACS on STN  
 131:259998 Secondary **lithium batteries**. Kamino,  
 Maruo; Uesugi, Makoto; Fujimoto, Masahisa; Noma, Toshiyuki; Nishio,

Akiharu (Sanyo Electric Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11288704 A2 19991019 Heisei, 12 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1998-105797 19980331.

- AB The **batteries** have a **cathode**, a **Li** intercalating carbonaceous **anode**, and a polymer electrolyte membrane also serving as separator; where the **electrodes** contain a polymer electrolyte contg. a styrene-ethylene oxide block copolymer and a **Li** salt. The **cathodes** may be  $\text{LiNi}_x\text{Co}_{1-x}\text{O}_2$  ( $x \leq 1$ ) or  $\text{LiMn}_2\text{O}_4$ .
- IC ICM H01M004-02  
ICS H01M004-58; H01M004-62; H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **lithium battery electrode** polymer electrolyte; styrene ethylene oxide copolymer electrolyte **battery electrode**
- IT **Battery electrodes**  
(**electrodes** contg. styrene-ethylene oxide block copolymer based electrolytes for secondary **lithium batteries**)
- IT 7791-03-9, **Lithium** perchlorate 107311-90-0, Ethylene oxide-styrene block copolymer  
(compns. of styrene-ethylene oxide block copolymer based electrolytes in **electrodes** for secondary **lithium batteries**)
- IT 7782-42-5, Graphite, uses 12031-65-1, **Lithium** nickel oxide ( $\text{LiNiO}_2$ ) 12057-17-9, **Lithium** manganese oxide ( $\text{LiMn}_2\text{O}_4$ ) 12190-79-3, Cobalt **lithium** oxide ( $\text{CoLiO}_2$ ) 101920-93-8, Cobalt **lithium** nickel oxide ( $\text{Co}_{0.5}\text{LiNi}_{0.5}\text{O}_2$ ) 113066-89-0, Cobalt **lithium** nickel oxide ( $\text{Co}_{0.2}\text{LiNi}_{0.8}\text{O}_2$ )  
(**electrodes** contg. styrene-ethylene oxide block copolymer based electrolytes for secondary **lithium batteries**)
- IT 7782-42-5, Graphite, uses 12031-65-1, **Lithium** nickel oxide ( $\text{LiNiO}_2$ ) 12057-17-9, **Lithium** manganese oxide ( $\text{LiMn}_2\text{O}_4$ ) 12190-79-3, Cobalt **lithium** oxide ( $\text{CoLiO}_2$ ) 101920-93-8, Cobalt **lithium** nickel oxide ( $\text{Co}_{0.5}\text{LiNi}_{0.5}\text{O}_2$ ) 113066-89-0, Cobalt **lithium** nickel oxide ( $\text{Co}_{0.2}\text{LiNi}_{0.8}\text{O}_2$ )  
(**electrodes** contg. styrene-ethylene oxide block copolymer based electrolytes for secondary **lithium batteries**)

L71 ANSWER 8 OF 28 HCA COPYRIGHT 2003 ACS on STN

131:102668 Polymerizable compositions containing acid-sensitive polymerization initiators and their application to solid electrolytes. Takeuchi, Masataka; Naijo, Shuichi; Tokita, Koji (Showa Denko K. K., Japan). Jpn. Kokai Tokkyo Koho JP 11171912 A2. 19990629 Heisei, 24 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1997-343252 19971212.

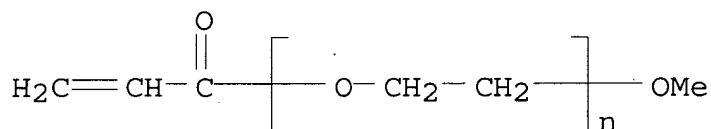
- AB Title compns. contain  $\geq 1$  polymerizable compds. and  $\geq 1$  acid-sensitive polymn. initiator precursors and the solid electrolytes are those prepd. by polymn. of the compds. after decompn. of the polymn. initiator precursors by acids or heating.

The electrolytes are suitable for **battery electrodes** contg. **electrode** active masses, for elec. double layer capacitors contg. polar materials, and the **batteries** and capacitors themselves and manuf. of them are also claimed. Thus, polyethylene glycol dimethacrylate (Blemmer PDE 600) 1.2, Al<sub>2</sub>O<sub>3</sub> (Aluminum oxide C) 0.33, ethylene carbonate 1.8, Et Me carbonate 4.2, LiPF<sub>6</sub> 0.60, and Bu<sub>4</sub>N<sup>+</sup> BuPh<sub>3</sub>B<sup>-</sup> 0.005 g were mixed under Ar, applied on a PET film, and left for 30 min in Ar to give a composite film having ion cond. 2.5 .times. 10<sup>-3</sup> and 0.7 .times. 10<sup>-3</sup> S/cm at 25 and -20.degree., resp.

IT **32171-39-4DP**, Polyethylene glycol methyl ether acrylate, polymer with ethylene oxide-propylene oxide copolymer adduct with isocyanatoethyl methacrylate (Blemmer AE 400; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IT **87105-87-1P** (monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)

RN 87105-87-1 HCA

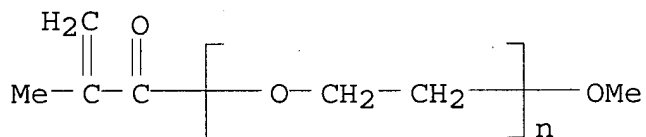
CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

CCI PMS



IC ICM C08F004-12

ICS C08F299-00; H01B001-12; H01G009-025; H01M004-02; H01M004-04; H01M004-06; H01M006-18; H01M010-40

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 38, 52, 76

ST polymerizable compn acid sensitive polymn initiator; solid

- electrolyte monomer compn polymn initiator; polyethylene glycol dimethacrylate solid electrolyte precursor; butyltriphenylborate tetrabutylammonium polymn initiator precursor; **battery electrode** solid electrolyte polymerizable compn; double layer capacitor electrolyte polymerizable compn
- IT Polycarbonates, preparation  
Polyoxyalkylenes, preparation  
(acrylic; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Fluoropolymers, uses  
(**anode** from; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Capacitors  
(double layer; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Alkali metal salts  
Quaternary ammonium compounds, uses  
(electrolyte; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Acids, uses  
Phosphonium compounds  
Transition metal salts  
(electrolytes; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Carbon fibers, uses  
(graphite, **battery anode**; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Secondary **batteries**  
(**lithium**; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Polymerization catalysts  
Solid electrolytes  
(monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 32171-39-4DP, Polyethylene glycol methyl ether acrylate, polymer with ethylene oxide-propylene oxide copolymer adduct with isocyanatoethyl methacrylate  
(Blemmer AE 400; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 24937-79-9  
(**anode** from; monomer compn. contg. acid-sensitive polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)



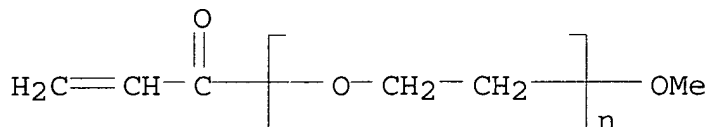
- IT 12190-79-3, **Lithium** cobalt oxide ( $\text{LiCoO}_2$ )  
(**cathode** active mass; monomer compn. contg.  
acid-sensitive polymn. initiator precursors for solid  
electrolytes for **batteries** and double layer capacitors)
- IT 14283-07-9, **Lithium** tetrafluoroborate 21324-40-3,  
**Lithium** hexafluorophosphate  
(electrolyte; monomer compn. contg. acid-sensitive polymn.  
initiator precursors for solid electrolytes for **batteries**  
and double layer capacitors)
- IT 1344-28-1, Aluminum oxide ( $\text{Al}_2\text{O}_3$ ), uses 112760-18-6, KW 2200  
(fillers; monomer compn. contg. acid-sensitive polymn. initiator  
precursors for solid electrolytes for **batteries** and  
double layer capacitors)
- IT 143-66-8, Sodium tetraphenylborate 429-06-1, Tetraethylammonium  
tetrafluoroborate 120307-06-4, Tetrabutylammonium  
butyltriphenylborate 189947-86-2 228863-57-8  
(monomer compn. contg. acid-sensitive polymn. initiator  
precursors for solid electrolytes for **batteries** and  
double layer capacitors)
- IT 9004-74-4DP, Polyethylene glycol monomethyl ether, reaction product  
with isocyanatoethyl methacrylate, polymers 9051-34-7P  
9082-00-2DP, Ethylene oxide-propylene oxide copolymer glycerin  
ether, reaction product with isocyanatoethyl methacrylate, polymers  
30674-80-7DP, reaction product with ethylene oxide-propylene oxide  
copolymer 50862-75-4DP, Poly(oxy-carbonyloxy-1,3-propanediyl),  
reaction product with isocyanatoethyl methacrylate, polymers  
**87105-87-1P** 228863-58-9DP, reaction product with  
isocyanatoethyl methacrylate, polymers  
(monomer compn. contg. acid-sensitive polymn. initiator  
precursors for solid electrolytes for **batteries** and  
double layer capacitors)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
108-32-7, Propylene carbonate 623-53-0, Ethyl methyl carbonate  
(solvent; monomer compn. contg. acid-sensitive polymn. initiator  
precursors for solid electrolytes for **batteries** and  
double layer capacitors)
- L71. ANSWER 9 OF 28 HCA COPYRIGHT 2003 ACS on STN
- 131:102667 Electrochemically polymerizable compositions for solid  
electrolytes. Takeuchi, Masataka; Ohkubo, Takashi; Yabe, Shoji  
(Showa Denko K. K., Japan). Jpn. Kokai Tokkyo Koho JP 11171910 A2  
**19990629** Heisei, 24 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1997-343251 19971212.
- AB Title compns. contain .gtoreq.1 polymerizable compds. and .gtoreq.1  
electrochem. decomposable polymn. initiator precursors and the solid  
electrolytes are those prep'd. by polymn. of the compds. The  
electrolytes are suitable for **battery electrodes**  
contg. **electrode** active masses, for elec. double layer  
capacitors contg. polar materials, and the **batteries** and  
capacitors themselves and manuf. of them are also claimed. Thus,  
polyethylene glycol dimethacrylate (Blemmer PDE 600) 1.2,  $\text{Al}_2\text{O}_3$   
(Aluminum oxide C) 0.33, ethylene carbonate 1.8, Et Me carbonate

4.2, LiBF<sub>4</sub> 0.45, and Bu<sub>4</sub>N<sup>+</sup> BuPh<sub>3</sub>B<sup>-</sup> 0.005 g were mixed under Ar to give title compn., which was applied on a Pt film then the film was laminated with another Pt film, charged (4 V) for 1 min, and left at room temp. for 15 min to give a composite film having ion cond. 1.5 .times. 10<sup>-3</sup> and 0.3 .times. 10<sup>-3</sup> S/cm at 25 and -20.degree., resp.

IT **32171-39-4DP**, Polyethylene glycol methyl ether acrylate, polymer with ethylene oxide-propylene oxide copolymer adduct with isocyanatoethyl methacrylate  
(Blemmer AE 400; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IT **87105-87-1P**  
(monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)

RN 87105-87-1 HCA

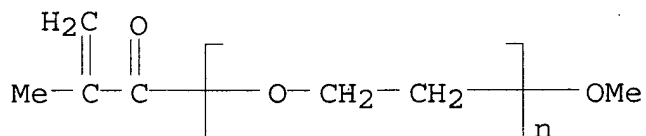
CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

CCI PMS



IC ICM C08F002-58

ICS H01B001-12; H01G009-025; H01M004-02; H01M004-04; H01M004-06; H01M006-18; H01M010-40; C08F020-10; C08F299-02

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 38, 52, 76

ST polymerizable compn electrochem decomposable polymn initiator; solid electrolyte monomer compn polymn initiator; polyethylene glycol dimethacrylate solid electrolyte precursor; butyltriphenylborate tetrabutylammonium polymn initiator precursor; **battery electrode** solid electrolyte polymerizable compn; double layer capacitor electrolyte polymerizable compn

- IT Polycarbonates, preparation  
Polyoxyalkylenes, preparation  
(acrylic; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Fluoropolymers, uses  
(**anode** from; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Capacitors  
(double layer; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Alkali metal salts  
Quaternary ammonium compounds, uses  
(electrolyte; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Acids, uses  
Phosphonium compounds  
Transition metal salts  
(electrolytes; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Carbon fibers, uses  
(graphite, **battery anode**; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Secondary **batteries**  
(**lithium**; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT Polymerization catalysts  
Solid electrolytes  
(monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 32171-39-4DP, Polyethylene glycol methyl ether acrylate, polymer with ethylene oxide-propylene oxide copolymer adduct with isocyanatoethyl methacrylate  
(Blemmer AE 400; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 24937-79-9  
(**anode** from; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 12190-79-3, **Lithium** cobalt oxide ( $\text{LiCoO}_2$ )  
(**cathode** active mass; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)

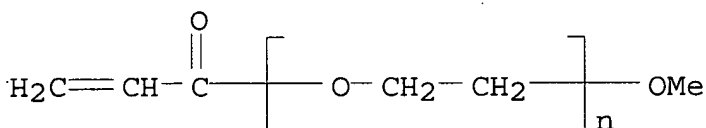
- IT 429-06-1, Tetraethylammonium tetrafluoroborate 69444-47-9, Triethylmethylammonium tetrafluoroborate (electrolyte; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 1344-28-1, Aluminum oxide (Al<sub>2</sub>O<sub>3</sub>), uses 112760-18-6, KW 2200 (fillers; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 143-66-8, Sodium tetraphenylborate 120307-06-4, Tetrabutylammonium butyltriphenylborate 189947-86-2 228863-57-8 (monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 9004-74-4DP, Polyethylene glycol monomethyl ether, reaction product with isocyanatoethyl methacrylate, polymers 9051-34-7P 9082-00-2DP, Ethylene oxide-propylene oxide copolymer glycerin ether, reaction product with isocyanatoethyl methacrylate, polymers 30674-80-7DP, reaction product with ethylene oxide-propylene oxide copolymer 50862-75-4DP, Poly(oxy carbonyloxy-1,3-propanediyl), reaction product with isocyanatoethyl methacrylate, polymers **87105-87-1P** 228863-58-9DP, reaction product with isocyanatoethyl methacrylate, polymers (monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 623-53-0, Ethyl methyl carbonate (solvent; monomer compn. contg. electrochem decomposable polymn. initiator precursors for solid electrolytes for **batteries** and double layer capacitors)

L71 ANSWER 10 OF 28 HCA COPYRIGHT 2003 ACS on STN

- 129:56539 **Lithium** secondary **batteries** with good cycling performance. Kamino, Maruo; Yamazaki, Motoya; Noma, Toshiyuki; Nishio, Koji (Sanyo Electric Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10149813 A2 **19980602** Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-323475 19961118.
- AB Title **batteries** have **anodes** contg. solid polyelectrolytes with Young's modulus 0.1 .times. 104-3.5 .times. 104 kg/cm<sup>2</sup>.
- IC ICM H01M004-02  
ICS H01M004-04; H01M004-58; H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 38
- ST **lithium battery anode** polyelectrolyte modulus; cycling performance **lithium battery anode** polyelectrolyte
- IT **Battery anodes**  
Polyelectrolytes  
(**lithium** secondary **batteries** with **anodes** contg. solid polyelectrolytes for good cycling

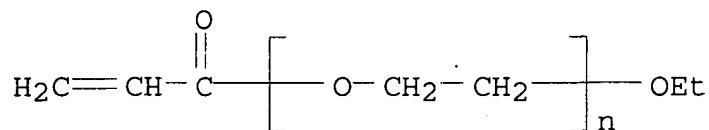
- performance)  
 IT Secondary **batteries**  
 (lithium; lithium secondary **batteries**  
 with **anodes** contg. solid polyelectrolytes for good  
 cycling performance)  
 IT Secondary **batteries**  
 (lithium; lithium secondary **batteries**  
 with **anodes** contg. solid polyelectrolytes for good  
 cycling performance)

- L71 ANSWER 11 OF 28 HCA COPYRIGHT 2003 ACS on STN  
 129:35350 Acrylic (fluoro)polyoxyalkylene solid electrolytes for  
 compounding with **electrodes** useful in **batteries**  
 and double-layer capacitors and manufacturing thereof. Takeuchi,  
 Masataka; Yabe, Shoji; Okubo, Takashi; Tokita, Koji (Showa Denko K.  
 K., Japan). Jpn. Kokai Tokkyo Koho JP 10116513 A2 19980506  
 Heisei, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 1996-270942 19961014.  
 AB. The solid electrolyte contains (A) polyoxyalkylenes or  
 oligooxyalkylenes, (B) .gtoreq.1 polymer having crosslinked or  
 branched (oxy)fluorocarbon structures, (C) .gtoreq.1 electrolyte,  
 and (D) .gtoreq.1 filler with av. particle size 0.01-100 .mu.m. The  
**electrode** using the above solid electrolyte is manufd. by  
 (1) immersing a polymerizable compn. contg. (a) a thermally or  
 active ray-polymerizable compd. pendent with polymerizable  
 functional groups of CH<sub>2</sub>=CR<sub>1</sub>CO<sub>2</sub>R<sub>2</sub>- or CH<sub>2</sub>=CR<sub>3</sub>CO(OR<sub>4</sub>)<sub>x</sub>NHCO<sub>2</sub>R<sub>5</sub>- [R<sub>1</sub>,  
 R<sub>3</sub> = H, alkyl; R<sub>2</sub>, R<sub>5</sub> = polyoxyalkylene-, oligooxyalkylene-, or  
 (oxy)fluorocarbon-contg. group; R<sub>4</sub> = C.ltoreq.10 (heteroatom-contg.)  
 divalent org. group; x = 0-10] , (b) .gtoreq.1 electrolyte, and (c)  
 .gtoreq.1 filler with av. particle size 0.01-100 .mu.m in a  
**electrode** or placing it on a support and (2) polymg. it.  
 The **electrode** obtained by the above method,  
**batteries** using the **electrode**, and an elec.  
 double-layer capacitor using the above solid electrolyte are also  
 claimed. The electrolyte shows high ion cond. and heat resistance  
 and good mold processability.  
 IT 32171-39-4DP, polymers with polypropylene triol,  
 isocyanatoethyl methacrylate, and carbonates  
 (acrylic (fluoro)polyoxyalkylene solid electrolytes for  
 compounding with **electrodes** useful in **batteries**  
 and double-layer capacitors and manufg. thereof)  
 RN 32171-39-4 HCA  
 CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-  
 (9CI) (CA INDEX NAME)



- ICS C08G061-02; H01G009-025; H01M006-18; H01M010-40
- CC 76-10 (Electric Phenomena)  
Section cross-reference(s): 38, 52, 72
- ST acrylic fluoro polyoxyalkylene solid electrolyte; methacrylic fluoro polyoxyalkylene solid electrolyte; **battery electrode** composite acrylic solid electrolyte; double layer capacitor solid electrolyte
- IT Secondary **batteries**  
Solid electrolytes  
(acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT Synthetic fibers  
(aluminum oxide, Rubiel TRA 08, filler; acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT Capacitors  
(double layer; acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT Polyoxyalkylenes, uses  
Polyoxyalkylenes, uses  
(fluorine-contg.; acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT Polyoxyalkylenes, uses  
(methacrylate-terminated; acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT Fluoropolymers, uses  
Fluoropolymers, uses  
(polyoxyalkylene-; acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT Polyoxyalkylenes, uses  
(triol derivs., reaction products with isocyanatoethyl methacrylate, polymers with carbonates; acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT 96-49-1DP, Ethylene carbonate, polymers with polypropylene triols and isocyanatoethyl methacrylate 105-58-8DP, Diethyl carbonate, polymers with polypropylene triols and isocyanatoethyl methacrylate 25322-69-4DP, triol derivs., reaction products with isocyanatoethyl methacrylate, polymers with carbonates 30674-80-7DP, 2-Isocyanatoethyl methacrylate, reaction products with polypropylene triols, polymers with carbonates

- (acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT 32171-39-4DP, polymers with polypropylene triol, isocyanatoethyl methacrylate, and carbonates 107852-51-7DP, Fomblin Z-DOL, reaction products with polyfluorocarbons and carbonates 203391-79-1DP, reaction products with polyoxyfluoroalkylenes, isocyanatoethyl methacrylate, and carbonates (acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT 375-01-9, 2,2,3,3,4,4,4-Heptafluoro-1-butanol (acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT 429-06-1, Tetraethylammonium tetrafluoroborate 14283-07-9, **Lithium** tetrafluoroborate 21324-40-3, **Lithium** hexafluorophosphate (electrolyte; acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- IT 1344-28-1, Alumina, uses 7631-86-9, Aerosil RX 200, uses (filler; acrylic (fluoro)polyoxyalkylene solid electrolytes for compounding with **electrodes** useful in **batteries** and double-layer capacitors and manufg. thereof)
- L71 ANSWER 12 OF 28 HCA COPYRIGHT 2003 ACS on STN  
129:30182 **Lithium** secondary **batteries**. Kaminu, Maruo; Yamazaki, Mikiya; Noma, Toshiyuki; Nishio, Koji (Sanyo Electric Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10144299 A2 19980529 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-312855 19961108.
- AB The **batteries** contain **cathodes**, polymer solid electrolytes, and Li-absorbing carbon **anodes** having 1 .times. 1012-1 .times. 1016 per 1 cm2 F, Cl, Br, or iodine on the surface. The halogens may be introduced by ion implantation on the **anode** surface. The **anodes** and the electrolytes show small interfacial resistance and the **batteries** show high discharge capacitance and improved charging-discharging cycle property.
- IT 35111-38-7, Polyethylene glycol ethyl ether acrylate (electrolyte; **lithium** secondary **batteries** using halogen ion-implanted carbon **anode** showing reduced interfacial resistance between solid polymer electrolyte)
- RN 35111-38-7 HCA  
CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-ethoxy-(9CI) (CA INDEX NAME)



- IC ICM H01M004-02  
ICS H01M004-04; H01M004-58; H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **lithium secondary battery carbon anode**  
; halogen implanted carbon **anode** secondary **battery**  
; solid polymer electrolyte interfacial resistance **anode**;  
charging discharging cycle property secondary **battery**
- IT **Battery anodes**  
Ion implantation  
Secondary **batteries**  
Solid electrolytes  
(**lithium secondary batteries** using halogen  
ion-implanted carbon **anode** showing reduced interfacial  
resistance between solid polymer electrolyte)
- IT 35111-38-7, Polyethylene glycol ethyl ether acrylate  
(electrolyte; **lithium secondary batteries**  
using halogen ion-implanted carbon **anode** showing  
reduced interfacial resistance between solid polymer electrolyte)
- IT 7553-56-2, Iodine, uses 7726-95-6, Bromine, uses 7782-41-4,  
Fluorine, uses 7782-50-5, Chlorine, uses  
(ion; **lithium secondary batteries** using  
halogen ion-implanted carbon **anode** showing reduced  
interfacial resistance between solid polymer electrolyte)
- IT 7553-56-2, Iodine, uses 7726-95-6, Bromine, uses 7782-41-4,  
Fluorine, uses 7782-50-5, Chlorine, uses  
(ion; **lithium secondary batteries** using  
halogen ion-implanted carbon **anode** showing reduced  
interfacial resistance between solid polymer electrolyte)
- L71 ANSWER 13 OF 28 HCA COPYRIGHT 2003 ACS on STN
- 128:316183 Electrolytic solutions with high ion conductivity and wide  
usable temperature range, polymer-gel electrolytes, and their  
application. Takeuchi, Masataka (Showa Denko K. K., Japan). Jpn.  
Kokai Tokkyo Koho JP 10092221 A2 19980410 Heisei, 12 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-245068 19960917.
- AB The electrolytic solns. contain linear esters of R1OR2CO2R3 [R1, R3  
= C1-20 (fluoro) alkyl; R2 = C1-20 (fluoro) alkylene] and  
electrolytes. The electrolytes may be alkali metal salts,  
quaternary ammonium salts, quaternary phosphonium salts, and/or  
transition metal salts. The polymer gel electrolytes contain the  
linear esters, electrolytes, and polymers. The polymers may contain  
polymerizable functional groups H2C:CR4CO(OR5)xNHCO2R6 (R4 = H,  
C.ltoreq.5 alkyl; R5, R6 = C.gtoreq.1 bivalent org. group; x =  
0-10). Elec. cells and double-layer capacitors contg. the  
electrolytic solns. and/or polymer-gel electrolytes, are also



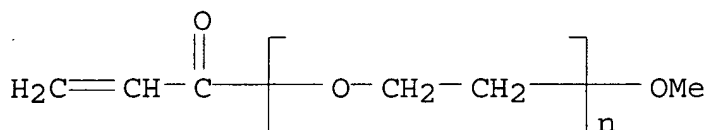
claimed.

IT 32171-39-4

(electrolytic solns. contg. linear esters with high ion cond. and output power)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01B001-12

ICS C07C069-00; C08L033-14; C08L033-24; H01G009-038; H01M010-40

CC 76-10 (Electric Phenomena)

Section cross-reference(s): 38

ST electrolytic soln linear ester ion cond; methyl methoxypropionate  
electrolytic soln solvent; polymer gel electrolyte secondary  
**battery**; capacitor electrolytic soln usable temp range

IT Conducting polymers

Oxides (inorganic), uses

Sulfides, uses

(**cathode**; electrolytic solns. contg. linear esters with high ion cond. and output power)

IT Secondary **batteries**

(secondary; electrolytic solns. contg. linear esters with high ion cond. and output power)

IT 7440-44-0, Carbon, uses

(active, **electrodes**; electrolytic solns. contg. linear esters with high ion cond. and output power)

IT 7782-42-5, Graphite, uses

(**anode**; electrolytic solns. contg. linear esters with high ion cond. and output power)

IT 12037-42-2P, Vanadium oxide (V6O13) 25233-30-1P, Polyaniline

(**cathode**; electrolytic solns. contg. linear esters with high ion cond. and output power)

IT 429-06-1, Tetraethylammonium tetrafluoroborate 7791-03-9

14283-07-9 21324-40-3, **Lithium** hexafluorophosphate

(electrolytes; electrolytic solns. contg. linear esters with high ion cond. and output power)

IT 32171-39-4

(electrolytic solns. contg. linear esters with high ion cond. and output power)

IT 1314-62-1, Vanadium oxide (V2O5), reactions 7440-62-2, Vanadium, reactions

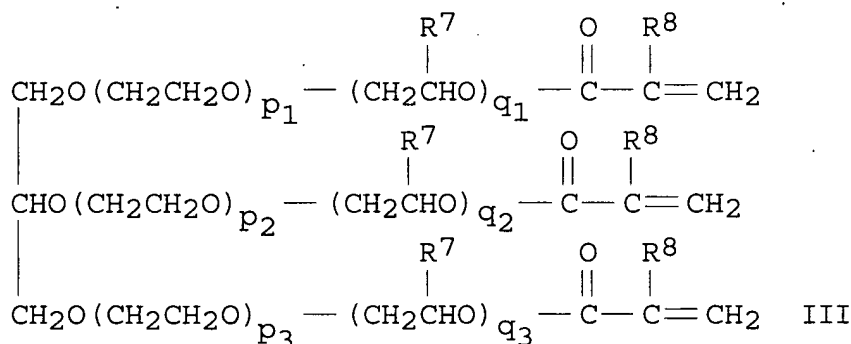
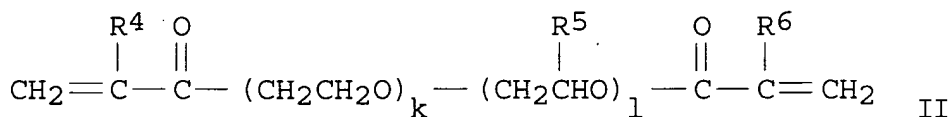
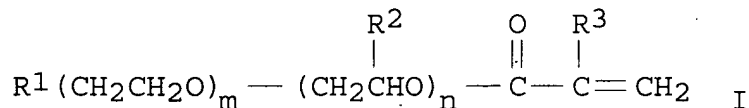
(in prepn. of **cathodes** for Li secondary **batteries**)

L71 ANSWER 14 OF 28 HCA COPYRIGHT 2003 ACS on STN

125:63173 Ion conductive polymer electrolyte **batteries**.

Takeda, Kazunari; Inamasu, Tokuo; Kuryama, Kazuya (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08115743 A2 19960507  
Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1994-248936 19941014.

GI



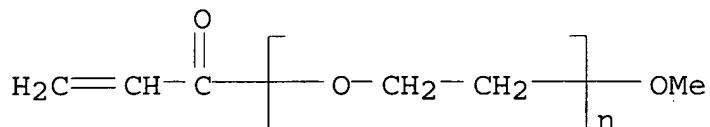
AB The **batteries** use ion conducting polymer electrolytes composed of M+PF<sub>6</sub><sup>-</sup>, an org. compd. sol. for the ionic compd., and a polymer of monomers selected from I (R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> = H or C.gtoeq.1 lower alkyl group; m .gtoreq.1; n .gtoreq.0; and n/m = 0-5), II (R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup> = H or C.gtoeq.1 lower alkyl group, k .gtoreq.3, l .gtoreq.0, and l/k = 0-5), and III [R<sup>7</sup>, R<sup>8</sup> = H or C.gtoeq.1 lower alkyl group; p<sub>1</sub>, p<sub>2</sub>, p<sub>3</sub> .gtoreq.3; q<sub>1</sub>, q<sub>2</sub>, q<sub>3</sub> .gtoreq.0; q<sub>1</sub>/p<sub>1</sub>, q<sub>2</sub>/p<sub>2</sub>, q<sub>3</sub>/p<sub>3</sub> = 0-5; and (p<sub>1</sub>+q<sub>1</sub>), (p<sub>2</sub>+q<sub>2</sub>), (p<sub>3</sub>+q<sub>3</sub>) .gtoreq.10]; composite **cathodes** contg. the electrolyte; and composite **anodes** contg. the electrolyte or an alkali metal based **anode**. The **cathodes** are preferably laminar or spinel type Li<sub>a</sub>M<sub>b</sub>M'<sub>c</sub>O<sub>2</sub>, where M = transition metal(s), M' = Group IIIA, IVA, and VA nonmetal or metalloid element, alk. earth metal, Zn, Cu, and/or Ti, 0 < a .ltoreq.1.15, 0.85 .ltoreq. (b+c) .ltoreq.1.30, and 0 < c.

IT 32171-39-4

(comps. of ion conductive polymer electrolytes for secondary lithium batteries)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01M010-40

ICS C08L071-02; H01M004-02; H01M004-06; H01M004-60; H01M006-18

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST **lithium battery** ion conductive polymer electrolyte; fluorophosphate ion conductive polymer electrolyte **battery**; **electrode** ion conductive polymer electrolyte **battery**; polyoxyalkylene acrylate polymer electrolyte **battery**

IT **Battery** electrolytes  
(comps. of ion conductive polymer electrolytes for secondary **lithium batteries**)

IT **Electrodes**  
(**battery**, comps. of ion conductive polymer electrolytes for composite **electrodes** in secondary **lithium batteries**)

IT 12190-79-3, Cobalt **lithium** oxide (CoLiO<sub>2</sub>)  
(cobalt **lithium** oxide **cathodes** contg. ion conductive polymer electrolytes for **batteries**)

IT 96-48-0, .gamma.-Butyrolactone 110-71-4, 1,2-Dimethoxyethane  
21324-40-3, **Lithium** hexafluorophosphate 26570-48-9

**32171-39-4** 111804-95-6  
(comps. of ion conductive polymer electrolytes for secondary **lithium batteries**)

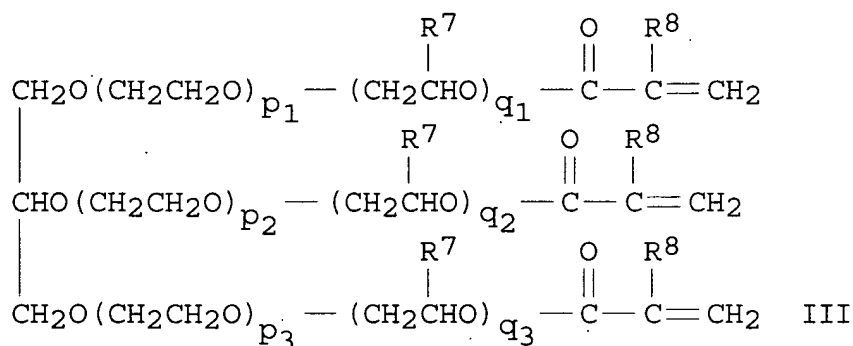
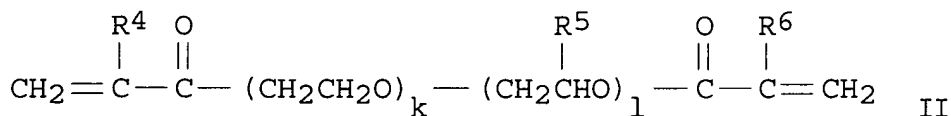
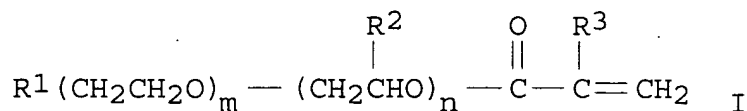
IT 96-48-0, .gamma.-Butyrolactone 110-71-4, 1,2-Dimethoxyethane  
21324-40-3, **Lithium** hexafluorophosphate 26570-48-9

**32171-39-4** 111804-95-6  
(comps. of ion conductive polymer electrolytes for secondary **lithium batteries**)

L71 ANSWER 15 OF 28 HCA COPYRIGHT 2003 ACS on STN

125:15202 **Batteries** using ion conductive polymers. Takeda, Kazunari; Inamasu, Tokuo; Kuryama, Kazuya (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08096817 A2 **19960412** Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-230042 19940926.

GI



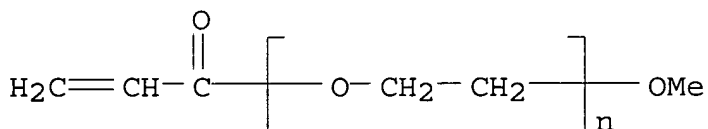
AB The **batteries** use **cathodes** and **anodes** contg. and electrolytes composed of an ion conductive polymer contg. .gtoreq.1 dissolved ionic compd.; where the polymer is selected from I (R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> = H or lower alkyl group; m .gtoreq.1, n .gtoreq.0, and n/m = 0-5), II (R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup> = H or lower alkyl group; k .gtoreq.3, l .gtoreq.0, and l/k = 0-5), and III [R<sup>7</sup>, R<sup>8</sup> = H or lower alkyl group, p<sub>1</sub>, p<sub>2</sub>, p<sub>3</sub> .gtoreq.3; q<sub>1</sub>, q<sub>2</sub>, q<sub>3</sub> .gtoreq.0, p<sub>1</sub>/q<sub>1</sub>, p<sub>2</sub>/q<sub>2</sub>, p<sub>3</sub>/q<sub>3</sub> = 0-5; (p<sub>1</sub>+q<sub>1</sub>), (p<sub>2</sub>+q<sub>2</sub>), (p<sub>3</sub>+q<sub>3</sub>) .gtoreq.10], the ionic compd. is MN(YCnX<sub>2n+1</sub>)<sub>2</sub> (M = alkali metal, e.g., Li and Na; n = integer; Y = SO<sub>2</sub> or CO; X = F or Cl) dissolved in an org. compd. and contg. .ltoreq.0.2 wt.% NH(YCnX<sub>2n+1</sub>)<sub>2</sub>, NH<sub>2</sub>YCnX<sub>2n+1</sub>, and NH<sub>4</sub>YCnX<sub>2n+1</sub>. The **anodes** may be an alkali metal based **anode**.

IT 32171-39-4

(ion conductive polymers contg. purified **lithium** bis(trifluoromethanesulfonyl)imide for **battery electrodes** and electrolytes)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01M006-18  
ICS H01M004-06; H01M004-60  
ICA C08F020-10; C08F299-02; H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
ST **battery** ion conductive polymer compn; **cathode**  
ion conductive polymer **battery**; **anode** ion  
conductive polymer **battery**; electrolyte ion conductive  
polymer **battery**  
IT **Battery** electrolytes  
(purifn. of **lithium** bis(trifluoromethanesulfonyl)imide  
for ion conductive polymer **battery** electrolytes)  
IT **Batteries**, secondary  
(purifn. of **lithium** bis(trifluoromethanesulfonyl)imide  
for ion conductive polymers for **battery**  
**electrodes** and electrolytes)  
IT **Electrodes**  
(**battery**, **electrodes** contg. ion conductive  
polymers contg. purified **lithium**  
bis(trifluoromethanesulfonyl)imide for **lithium**  
**batteries**)  
IT 26570-48-9 32171-39-4 111804-95-6  
(ion conductive polymers contg. purified **lithium**  
bis(trifluoromethanesulfonyl)imide for **battery**  
**electrodes** and electrolytes)  
IT 1313-13-9, Manganese dioxide, uses  
(manganese dioxide **cathodes** contg. ion conductive  
polymers contg. purified **lithium**  
bis(trifluoromethanesulfonyl)imide for **lithium**  
**batteries**)  
IT 91742-21-1P  
(purifn. of **lithium** bis(trifluoromethanesulfonyl)imide  
for ion conductive polymers for **battery**  
**electrodes** and electrolytes)  
IT 421-85-2, Trifluoromethanesulfonamide 38542-94-8, Ammonium  
trifluoromethanesulfonate 82113-65-3  
(removal of impurities from **lithium**  
bis(trifluoromethanesulfonyl)imide for ion conductive polymers  
for **battery electrodes** and electrolytes)  
IT 421-85-2, Trifluoromethanesulfonamide 38542-94-8, Ammonium  
trifluoromethanesulfonate 82113-65-3  
(removal of impurities from **lithium**  
bis(trifluoromethanesulfonyl)imide for ion conductive polymers  
for **battery electrodes** and electrolytes)  
L71 ANSWER 16 OF 28 HCA COPYRIGHT 2003 ACS on STN  
124:348217 Secondary **lithium batteries** using  
ion-conductive polymer. Takeda, Kazunari; Mishima, Hiromitsu (Yuasa  
Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08064231 A2  
19960308 Heisei, 9 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1994-203126 19940829.  
AB The **batteries** contain .gtoreq.1 sol. ion-conductive

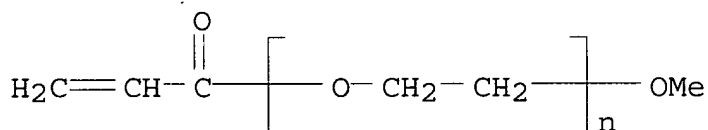
polymers in the **cathodes** or the alkali metal **anodes** or use electrolytes of polymers of (1)  $R_1(CH_2CH_2O)_m[CH_2CH(R_2)O]_nCOCH_2R_3$  ( $R_1-3 = H$ , C.gtoreq.1 alkyl; m .gtoreq.1; n .gtoreq.0; n/m = 0-5),  $CH_2:CR_4CO(CH_2CH_2O)_k[CH_2CH(R_5)O]_lCOCH_2R_6$  ( $R_4-6 = H$ , C.gtoreq.1 alkyl; k .gtoreq.3; l .gtoreq.0; l/k = 0-5), and/or  $CH_2:CR_8CO(OCHR_7CH_2)_q(OCH_2CH_2)_pOCH_2CH[O(CH_2CH_2O)_r(CH_2CH(R_7)O)]_sCOCH_2R_8$  ( $R_7-8 = H$ , C.gtoreq.1 alkyl; p .gtoreq.3; r .gtoreq.3; t .gtoreq.3; q .gtoreq.0; s .gtoreq.0; u .gtoreq.0; q/p = 0-5; s/r = 0-5; u/t = 0-5; p + q .gtoreq.10; r + s .gtoreq.10; t + u .gtoreq.10), (2) ionic compds., (3) ionic compd.-sol. org. compds., (2) compds. above, and/or (4) nylon. particles having diam. .ltoreq.15 .mu.m.

IT 32171-39-4

(Li battery contg. ion-conductive polyethylene oxide-vinyl ether (and nylon particle))

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01M010-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 38

ST polyethylene oxide vinyl ether **battery** electrolyte; **electrode battery** polyethylene oxide vinyl ether; nylon additive **battery**

IT **Batteries**, secondary

(Li battery contg. ion-conductive polyethylene oxide-vinyl ether (and nylon particle))

IT Polyamides, uses

(Li battery contg. ion-conductive polyethylene oxide-vinyl ether (and nylon particle))

IT 26570-48-9 32171-39-4 111804-95-6

(Li battery contg. ion-conductive polyethylene oxide-vinyl ether (and nylon particle))

L71 ANSWER 17 OF 28 HCA COPYRIGHT 2003 ACS on STN

124:294534 **Batteries** using ion-conductive polymers. Takeda, Kazunari; Inamasu, Tokuo (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08017467 A2 19960119 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-147437 19940629.

AB The **batteries** have **cathodes** contg.

ion-conductive polymers and .gtoreq.1 ionic compds., electrolytes contg. the ion-conductive polymers, and **anodes** contg. the ion-conductive polymers or alkali metals. The ion-conductive polymers consist of (1)  $R_1(CH_2CH_2O)_m[CH_2C(R_2)HO]_nC(O)C(R_3)CH_2$  ( $R_1-3 = H$ , C.gtoreq.1 lower alkyl; m .gtoreq.1; n .gtoreq.0; n/m = 0-5),

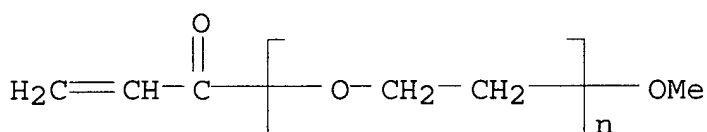
CH<sub>2</sub>C(R<sub>4</sub>)C(O)(CH<sub>2</sub>CH<sub>2</sub>O)<sub>k</sub>[CH<sub>2</sub>C(R<sub>5</sub>)HO]<sub>l</sub>C(O)C(R<sub>6</sub>)CH<sub>2</sub> (R<sub>4</sub>-6 = H, C.gtoeq.1 lower alkyl; k .gtoreq.3; l .gtoreq.0; l/k = 0-5), and/or C{H<sub>2</sub>O(CH<sub>2</sub>CH<sub>2</sub>O)<sub>p</sub>[CH<sub>2</sub>C(R<sub>7</sub>)HO]<sub>q</sub>C(O)C(R<sub>8</sub>)CH<sub>2</sub>} C{HO(CH<sub>2</sub>CH<sub>2</sub>O)<sub>r</sub>[CH<sub>2</sub>C(R<sub>7</sub>)HO]<sub>s</sub>C(O)C(R<sub>8</sub>)CH<sub>2</sub>} C{H<sub>2</sub>O(CH<sub>2</sub>CH<sub>2</sub>O)<sub>v</sub>[CH<sub>2</sub>C(R<sub>7</sub>)HO]<sub>w</sub>C(O)C(R<sub>8</sub>)CH<sub>2</sub>} (R<sub>7</sub>-8 = H, C.gtoeq.1 lower alkyl; p, r v .gtoreq.3; q, s, w .gtoreq.0; q/p = 0-5; s/r = 0-5; w/v = 0-5; p + q .gtoreq.10; r + s .gtoreq.10; and v + w .gtoreq.10 ), (2) ionic compds., (3) ionic compds.-sol. org. compds., and (4) iodides selected from CaI<sub>2</sub>, KI, NaI, and LiI. The **cathodes** may contain Mn oxides. The **batteries** have good leakage prevention, prodn. efficiency, and high performance and energy d.

IT 32171-39-4

(**battery** electrolytes contg.)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01M010-40

ICS C08L071-02; H01M004-60; H01M006-18

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 38

ST ion conductive polymer electrolyte **battery**; iodide electrolyte polymer **battery**

IT **Battery** electrolytes

(contg. ion-conductive polymers and iodides for leakage prevention)

IT 7439-93-2, **Lithium**, uses (**battery anode**)

IT 1313-13-9, Manganese dioxide, uses (**battery cathode**)

IT 108-32-7, Propylene carbonate 7681-11-0, Potassium iodide, uses 7681-82-5, Sodium iodide, uses 7791-03-9, **Lithium** perchlorate 10102-68-8, Calcium iodide 10377-51-2, **Lithium** iodide 26570-48-9 32171-39-4 111804-95-6 (**battery** electrolytes contg.)

L71 ANSWER 18 OF 28 HCA COPYRIGHT 2003 ACS on STN

124:265658 Secondary **lithium batteries** using ion-conductive polymer. Takeda, Kazunari; Inamasu, Tokuo (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08022838 A2 19960123 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-155876 19940707.

AB The **batteries** contain .gtoreq.1 sol. ionic compd.-contg. ion-conductive polymers in the **cathodes** or the alkali

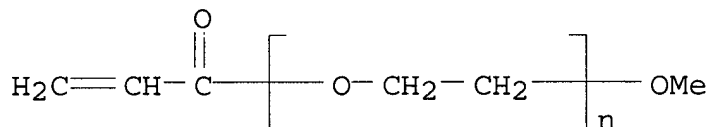
metal **anodes** or use electrolytes of polymers of (1)  
 $R_1(CH_2CH_2O)_m[CH_2CH(R_2)O]_nCOCR_3:CH_2$  ( $R_1-3 = H, C$ .gtoreq.1 alkyl;  $m$ .gtoreq.1;  $n$ .gtoreq.1;  $n/m = 0-5$ ),  $CH_2:CR_4CO(CH_2CH_2O)_k(CH_2CH(R_5)O)_l$   
 $COCR_6:CH_2$  ( $R_4-6 = H, C$ .gtoreq.1 alkyl;  $k$ .gtoreq.1;  $l$ .gtoreq.1;  $l/k$ .ltoreq.5), and/or  $CH_2:CR_8CO(OCHR_7CH_2)q(OCH_2CH_2)pOCH_2CH[O(CH_2CH_2O)r(CH_2CH(R_7)O)sCOCR_8:CH_2]CH_2O(CH_2CH_2O)t[CH_2CH(R_7)O]uCOCR_8:CH_2$  ( $R_7-8 = H, C$ .gtoreq.1 alkyl;  $p$ .gtoreq.3;  $r$ .gtoreq.3;  $t$ .gtoreq.3;  $q$ .gtoreq.0;  $s$ .gtoreq.0;  $u$ .gtoreq.0;  $q/p$ .ltoreq.5;  $s/r$ .ltoreq.5;  $u/t$ .ltoreq.5;  $p + q$ .gtoreq.10;  $r + s$ .gtoreq.10;  $t + u$ .gtoreq.10), (2)  $M^+-N(QCnX_{2n+1})_2$  ( $M =$  alkali metal;  $n$ .gtoreq.1;  $Q = SO_2, CO$ ;  $X = F, Cl$ ) or  $M^+-CZ(Q_1CnX_{2n+1})_2$  ( $Z = Q_2CdX_{2d+1}, Q_2R, R_9$ ;  $d$ .gtoreq.1;  $Q_1 = SO_2, CO$ ;  $R = C$ .gtoreq.1 alkyl, Ph;  $R_9 = C$ .gtoreq.1 alkyl, perfluoroalkyl, F, Cl), and/or (3) org. compds. which dissolve (2) compds. above. Preferably, the **batteries** use LiaAbMcO<sub>2</sub> ( $A =$ .gtoreq.1 transition metal;  $M =$ .gtoreq.1 Group IIIB-VB metal, alk. earth metal, Zn, Cu, and Ti;  $0 < a$ .ltoreq.1.15;  $b + c = 0.85-1.30$ ) **cathodes** and Li-intercalatable carbonaceous **anodes**.

IT 32171-39-4

(lithium battery electrolyte and electrodes contg.)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01M010-36

ICS C08L071-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38

ST polyethylene oxide vinyl ether **battery** electrolyte;  
**electrode battery** polyethylene oxide vinyl ether

IT **Battery** electrolytes  
 (ion-conductive polymer)

IT 12031-65-1, Lithium nickel oxide (LiNiO<sub>2</sub>)  
 (**battery cathodes**)

IT 26570-48-9 32171-39-4 111804-95-6  
 (lithium battery electrolyte and electrodes contg.)

IT 26570-48-9 32171-39-4 111804-95-6  
 (lithium battery electrolyte and electrodes contg.)

L71 ANSWER 19 OF 28 HCA COPYRIGHT 2003 ACS on STN

124:265657 Ion-conductive polymer electrolyte **batteries**.

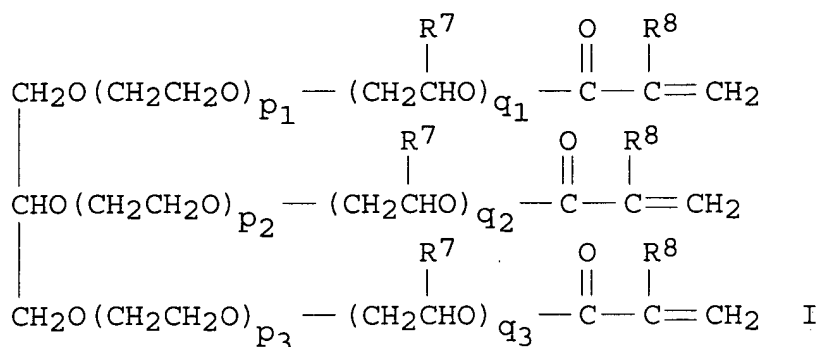
Takeda, Kazunari; Inamasu, Tokuo (Yuasa Battery Co Ltd, Japan).

Jpn. Kokai Tokkyo Koho JP 08007924 A2 19960112 Heisei, 9



pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-134011  
19940616.

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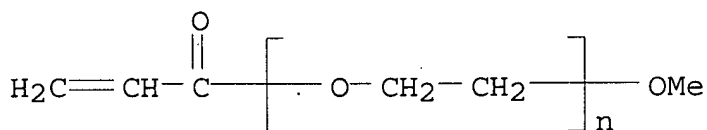
AB The alkali metal **batteries** use an electrolyte and **cathodes** contg. the electrolyte, which is composed of an ion-conductive polymer selected from  $\text{R}_1(\text{CH}_2\text{CH}_2\text{O})_m[\text{CH}_2\text{C}(\text{R}_2)\text{HO}]_n\text{C}(\text{O})\text{C}(\text{R}_3):\text{CH}_2$  ( $\text{R}_1\text{-3} = \text{H}$ , C.gtoreq.1 lower alkyl;  $m$  .gtoreq.1;  $n$  .gtoreq.0;  $n/m = 0\text{-}5$ ),  $\text{CH}_2:\text{C}(\text{R}_4)\text{C}(\text{O})(\text{CH}_2\text{CH}_2\text{O})_k[\text{CH}_2\text{C}(\text{R}_5)\text{HO}]_l\text{C}(\text{O})\text{C}(\text{R}_6):\text{CH}_2$  ( $\text{R}_4\text{-6} = \text{H}$ , or lower alkyl;  $k$  .gtoreq.3;  $l$  .gtoreq.0;  $l/k = 0\text{-}5$ ), and I ( $\text{R}_7\text{-8} = \text{H}$ , C.gtoreq.1 lower alkyl;  $p_1\text{-3}$  .gtoreq.3;  $q_1\text{-3}$  .gtoreq.0;  $q_1/p_1 = 0\text{-}5$ ;  $q_2/p_2 = 0\text{-}5$ ;  $q_3/p_3 = 0\text{-}5$ ;  $p_1 + q_1$  .gtoreq. 10;  $p_2 + q_2$  .gtoreq. 10;  $p_3 + q_3$  .gtoreq. 10 ); an ionic compd.  $\text{MN}(\text{Y}\text{CnX}_{2n+1})_2$  or  $\text{MCZ}(\text{Y}'\text{CnX}_{2n+1})_2$  ( $\text{M} = \text{alkali metals}$ ;  $\text{Z} = \text{Y}'\text{CnX}_{2n+1}$ ,  $\text{Y}'\text{R}$ , or  $\text{Y}'\text{R}'$ ;  $n, n'$  .gtoreq.1;  $\text{Y}, \text{Y}' = \text{SO}_2$  or  $\text{CO}$ ;  $\text{X} = \text{F}$  or  $\text{Cl}$ ;  $\text{R} = \text{C.gtoreq.1 alkyl, Ph}$ ;  $\text{R}' = \text{C.gtoreq.1 alkyl, perfluoroalkyl, F, Cl}$ ), and an (3) org. compd. sol. for the ionic compd. The **cathodes** may be Mn oxide. The **batteries** have good leakage prevention, prodn. efficiency, and high performance and energy d.

IT 32171-39-4

(compns. of ion conductive polymer electrolytes for **batteries**)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01M010-40

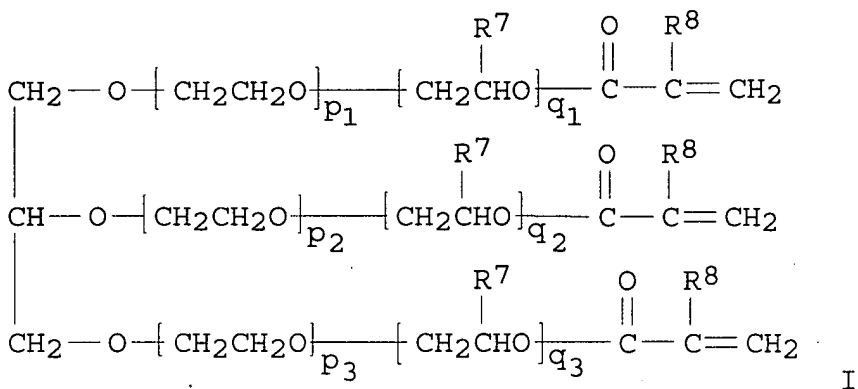
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST **cathode** ion conductive polymer electrolyte **battery**

- IT **Battery** electrolytes  
(comps. of ion conductive polymer electrolytes for **batteries**)
- IT **Cathodes**  
(**battery**, comps. of ion conductive polymer electrolytes for manganese dioxide **cathodes** in **lithium batteries**)
- IT 108-32-7, Propylene carbonate  
(**anode**; comps. of ion conductive polymer electrolytes for **batteries**)
- IT 26570-48-9 32171-39-4 90076-65-6, **Lithium**  
bis(trifluoromethylsulfonyl)imide 111804-95-6 132404-42-3  
(comps. of ion conductive polymer electrolytes for **batteries**)

L71 ANSWER 20 OF 28 HCA COPYRIGHT 2003 ACS on STN  
124:181124 **Batteries** containing improved ion-conductive polymer electrolytes. Takeda, Kazunari; Kuryama, Kazuya; Inamasu, Tokuo (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07302615 A2 19951114 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-96243 19940510.

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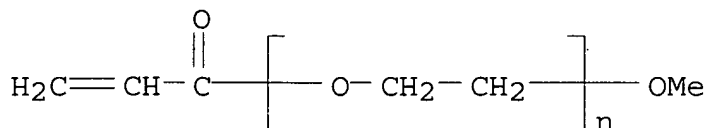


- AB The **batteries** use ion conductive polymer electrolytes contg. .gtoreq.1 ionic compds.; polymers selected from R1(CH2CH2O)m[CH2C(R2)HO]nC(O)C(R3):CH2 (R1-3 = H, C.gtoreq.1 lower alkyl; m .gtoreq.1; n .gtoreq.1; n/m =0-5), CH2:C(R4)C(O)(CH2CH2O)s[CH2C(R5)HO]tC(O)C(R6):CH2 (R4-6 = H, C.gtoreq.1 lower alkyl; s .gtoreq.3; t .gtoreq.0; t/s =0-5), and I (R7-8 = H, C.gtoreq.1 lower alkyl; p1-3 .gtoreq.3; q1-3 .gtoreq.0; q1/p1 =0-5; q2/p2 =0-5; q3/p3 =0-5; p1+q1 .gtoreq.10; p2+q2 .gtoreq.10; p3+q3 .gtoreq.10 ); an org. solvent of the ionic compds.; and polyolefin powder or fibers. The **battery electrodes** also contain the electrolyte. The **batteries** have good leakage prevention.
- IT 32171-39-4

(compsn. of ion conductive polyoxyethylene acrylate electrolytes  
for secondary **lithium batteries**)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-  
(9CI) (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST **battery** ion conductive polymer electrolyte;  
polyoxyethylene acrylate ion conductive electrolyte **battery**  
; polyolefin **battery** ion conductive polymer

IT Polyolefin fibers  
(compsn. of ion conductive polyoxyethylene acrylate electrolytes  
for **batteries**)

IT **Battery** electrolytes  
(compsn. of ion conductive polyoxyethylene acrylate electrolytes  
for secondary **lithium batteries**)

IT **Cathodes**  
(**battery**, **lithium** cobaltate **cathodes**  
contg. ion conductive polyoxyethylene acrylate electrolytes)

IT **Anodes**  
(**battery**, **lithium** intercalating carbon  
**anodes** contg. ion conductive polyoxyethylene acrylate  
electrolytes)

IT Polyolefin fibers  
(ethylene, compsn. of ion conductive polyoxyethylene acrylate  
electrolytes for **batteries**)

IT Alkenes, uses  
(polymers, compsn. of ion conductive polyoxyethylene acrylate  
electrolytes for **batteries**)

IT 7440-44-0, Carbon, uses  
(**anodes** contg. ion conductive polyoxyethylene acrylate  
electrolytes for secondary **lithium batteries**)

IT 12190-79-3  
(**cathode**; **cathodes** contg. ion conductive  
polyoxyethylene acrylate electrolytes for secondary  
**lithium batteries**)

IT 96-48-0 110-71-4, 1,2-Dimethoxyethane 9002-88-4, Flo-Beads LE  
1080 14283-07-9, **Lithium** tetrafluoroborate 26570-48-9  
32171-39-4 111804-95-6

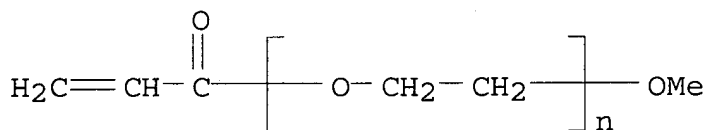
(compsn. of ion conductive polyoxyethylene acrylate electrolytes  
for secondary **lithium batteries**)

L71 ANSWER 21 OF 28 HCA COPYRIGHT 2003 ACS on STN

124:150940 **Batteries** containing improved ion-conductive

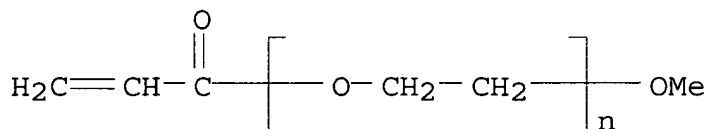
polymer electrolytes. Takeda, Kazunari; Ido, Shuichi (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07282850 A2 19951027 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-73282 19940412.

- AB The **batteries** comprise ion-conductive polymer compds. dissolved in .gtoreq.1 ionic compds., composite **cathodes** and composite **anodes** contg. the polymer compds., or alkali metals-contg. **anodes**. The polymer compds. contain (1)  $R_1(CH_2CH_2O)_m[CH_2C(R_2)HO]_nC(O)C(R_3):CH_2$  ( $R_1-3 = H$ , C.gtoreq.1 lower alkyl; m .gtoreq.1; n .gtoreq.1;  $n/m = 0-5$ ),  $CH_2:C(R_4)C(O)(CH_2CH_2O)_s[CH_2C(R_5)HO]_tC(O)C(R_6):CH_2$  ( $R_4-6 = H$ , C.gtoreq.1 lower alkyl; k .gtoreq.3; l .gtoreq.0;  $l/k = 0-5$ ),  $C\{H_2O(CH_2CH_2O)_{p1}[CH_2C(R_7)HO]_{q1}C(O)C(R_8):CH_2\}$ ,  $C\{HO(CH_2CH_2O)_{p2}[CH_2C(R_7)HO]_{q2}C(O)C(R_8):CH_2\}$ ,  $C\{H_2O(CH_2CH_2O)_{p3}[CH_2C(R_7)HO]_{q3}C(O)C(R_8):CH_2\}$  ( $R_7-8 = H$ , C.gtoreq.1 lower alkyl;  $p_1-3$  .gtoreq.3;  $q_1-3$  .gtoreq.0;  $q_1/p_1 = 0-5$ ;  $q_2/p_2 = 0-5$ ;  $q_3/p_3 = 0-5$ ;  $p_1 + q_1$  .gtoreq.10;  $p_2 + q_2$  .gtoreq.10;  $p_3 + q_3$  .gtoreq.10 ); ionic compds.; (3) ionic compds.-sol. org. compds.; and (4) .ltoreq.20 wt.% hydrophobically treated inorg. compds. The **batteries** have good leakage prevention, long-term reliability, and safety.
- IT 32171-39-4  
(**battery** electrolytes)
- RN 32171-39-4 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



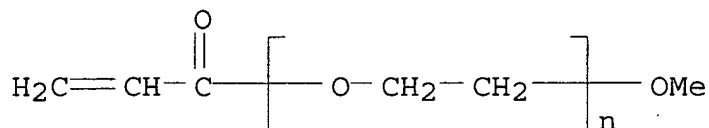
- IC ICM H01M010-40  
ICS H01M004-04
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST **battery** ion conductive polymer electrolyte;  
polyoxyethylene ion conductive polymer **battery**; safety  
**battery** polymer electrolyte
- IT **Battery** electrolytes  
(ion-conductive polymer)
- IT **Anodes**  
**Cathodes**  
(**battery**, contg. ion-conductive polymer compds.)
- IT 7439-93-2, **Lithium**, uses  
(**battery** anodes)
- IT 1313-13-9, Manganese dioxide, uses 12190-79-3  
(**battery** cathodes)
- IT 145991-66-8, Aerosil R 972D  
(**battery** electrodes contg.)
- IT 7439-93-2D, **Lithium**, polymer complexes 26570-48-9

- 32171-39-4 111804-95-6  
(battery electrolytes)
- IT 96-48-0 108-32-7, Propylene carbonate 110-71-4,  
1,2-Dimethoxyethane  
(battery electrolytes contg.)
- L71 ANSWER 22 OF 28 HCA COPYRIGHT 2003 ACS on STN  
124:92605 **Batteries** with improved electrolytes for leak  
prevention. Takeda, Kazunari; Kuryama, Kazuya; Inamasu, Tokuo  
(Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07263026  
A2 19951013 Heisei, 10 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1994-57143 19940328.
- AB The **batteries** comprise electrolytes contg. ion-conducting  
macromol. compds. with .gtoreq.1 ionic compds. and composite  
**cathodes** and composite **anodes** contg. the  
ion-conducting macromol. compds. or alkali metal **anodes**,  
where the ion-conducting macromol. compds. consist of (1)  
R1(C2H4O)m[CH2CH(R2)O]nC(O)C(R3):CH2 (R1-3 = H, lower alkyl, m  
.gtoreq.1, n .gtoreq.0, n/m = 0-5), CH2:C(R4)C(O)(C2H4O)s[CH2CH(R5)O]  
]tC(O)C(R6):CH2 (R4-6 = H, lower alkyl, s .gtoreq.3, t .gtoreq.0,  
t/s = 0-5), CH2{O(C2H4O)p1[CH2CH(R7)O]q1C(O)C(R8):CH2}CH{O(C2H4O)p2[  
CH2CH(R7)O]q2C(O)C(R8):CH2}CH2{O(C2H4O)p3[CH2CH(R7)O]q3C(O)CR8:CH2}  
(R7-8 = H; lower alkyl, p1 .gtoreq.3, p2 .gtoreq.3, p3 .gtoreq.3, q1  
.gtoreq.0, q2 .gtoreq.0, q3 .gtoreq.0, q1/p1 = 0-5, q2/p2 = 0-5,  
q3/p3 = 0-5, p1 + q1 .gtoreq.10, p2 + q2 .gtoreq.10, p3 + q3  
.gtoreq.10), (2) ionic compds., (3) org. compds. dissolving ionic  
compds., (4) polyolefin powders, and/or (5) inorg. compds. with  
hydrophobically treated surfaces. The electrolytes and the  
**electrodes** may be formed by irradiation. The **batteries**  
prevent electrolyte leakage, and have good performance and energy d.
- IT 32171-39-4  
(batteries contg. ion-conducting macromol. compds. for  
leakage prevention)
- RN 32171-39-4 HCA  
CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-  
(9CI) (CA INDEX NAME)



- IC ICM H01M010-40  
ICS H01M010-38
- ICA C08F290-06
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST **battery** electrolyte leak prevention polyoxyethylene;  
**anode** composite ion conducting polymer; **cathode**  
composite ion conducting polymer
- IT **Battery** electrolytes

- Electric conductors  
(**batteries** contg. ion-conducting macromol. compds. for leakage prevention)
- IT Polyoxyalkylenes, uses  
(ethylene oxide block copolymers; **batteries** contg. ion-conducting macromol. compds. for leakage prevention)
- IT **Anodes**  
**Cathodes**  
(**battery**, composites; **batteries** contg. ion-conducting macromol. compds. for leakage prevention)
- IT Alkenes, uses  
(polymers, **batteries** contg. ion-conducting macromol. compds. for leakage prevention)
- IT 9002-88-4, Flo-Beads LE 1080  
(Flo-Beads LE 1080; **batteries** contg. ion-conducting macromol. compds. for leakage prevention)
- IT 7440-44-0, Carbon, uses  
(**anode**, composite; **batteries** contg. ion-conducting macromol. compds. for leakage prevention)
- IT 96-48-0, .gamma.-Butyrolactone 110-71-4, 1,2-Dimethoxyethane 14283-07-9, **Lithium** tetrafluoroborate 26570-48-9 32171-39-4 111804-95-6 145991-66-8, Aerosil R 972D  
(**batteries** contg. ion-conducting macromol. compds. for leakage prevention)
- IT 96-48-0, .gamma.-Butyrolactone 110-71-4, 1,2-Dimethoxyethane 14283-07-9, **Lithium** tetrafluoroborate 26570-48-9 32171-39-4 111804-95-6 145991-66-8, Aerosil R 972D  
(**batteries** contg. ion-conducting macromol. compds. for leakage prevention)
- L71 ANSWER 23 OF 28 HCA COPYRIGHT 2003 ACS on STN  
124:61545 Secondary **batteries** containing ion conductive polymer electrolytes and their manufacture. Takeda, Kazunari (Yuasa Battery Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07263000 A2 19951013 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-47041 19940317.
- AB The **batteries** use composite **cathodes**, **Li** or composite **anodes**, and an electrolyte composed of a polymer contg. .gtoreq.1 dissolved ionic compd. and an org. solvent for the compd.; where the composite **electrodes** have cracks on their surface or inside the **electrodes** and contain the electrolyte. The manuf. of the **batteries** includes steps of forced drying of the composite **electrodes** to form the cracks.
- IT 32171-39-4  
(ion conductive polymer electrolytes for **batteries** using **electrodes** having cracks in active mass layers)
- RN 32171-39-4 HCA  
CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)

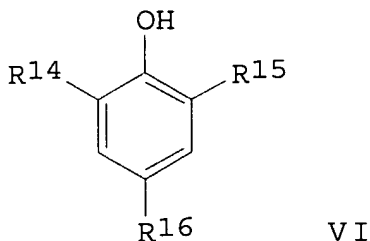
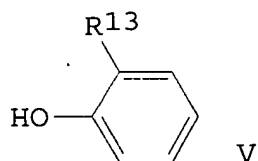
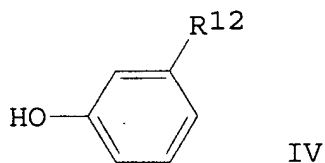
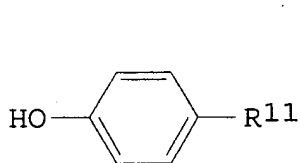
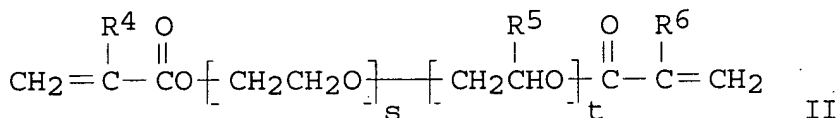
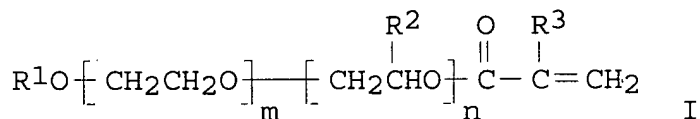


- IC ICM H01M006-18  
ICS H01M004-06; H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST polymer electrolyte **battery electrode** manuf
- IT **Electrodes**  
(**battery, electrodes** with active mass layers  
contg. ion conductive polymer electrolytes and having cracks for  
**batteries**)
- IT 1313-13-9, Manganese dioxide, uses 12190-79-3, Cobalt  
**lithium** oxide (CoLiO<sub>2</sub>) 30638-83-6  
(**cathodes** with active mass layers contg. ion conductive  
polymer electrolytes and having cracks for **batteries**)
- IT 108-32-7, Propylene carbonate 7791-03-9, **Lithium**  
perchlorate 26570-48-9 **32171-39-4** 111804-95-6  
(ion conductive polymer electrolytes for **batteries**  
using **electrodes** having cracks in active mass layers)
- IT 108-32-7, Propylene carbonate 7791-03-9, **Lithium**  
perchlorate 26570-48-9 **32171-39-4** 111804-95-6  
(ion conductive polymer electrolytes for **batteries**  
using **electrodes** having cracks in active mass layers)
- L71 ANSWER 24 OF 28 HCA COPYRIGHT 2003 ACS on STN
- 122:13743 Secondary **batteries** containing ion conductive  
polymers. Takeda, Kazunari (Yuasa Battery Co Ltd, Japan). Jpn.  
Kokai Tokkyo Koho JP 06251801 A2 **19940909** Heisei, 8 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-59632 19930223.
- AB The **batteries** uses **cathodes** contg. an active  
mass and an ion conductive polymer, an alkali metal **anode**  
or an **anode** contg. a carbonaceous material and the ion  
conductive polymer, and an electrolyte composed of the polymer;  
where the ion conductive polymer is a mixt. contg. an ionic compd.  
contg. anion other than PF<sub>6</sub>- dissolved in  
R<sub>1</sub>(CH<sub>2</sub>CH<sub>2</sub>O)<sub>m</sub>(CH<sub>2</sub>CHR<sub>2</sub>O)<sub>n</sub>COCR<sub>3</sub>:CH<sub>2</sub> or CH<sub>2</sub>:CR<sub>4</sub>CO(CH<sub>2</sub>CH<sub>2</sub>O)<sub>k</sub>(CH<sub>2</sub>CHR<sub>5</sub>O)<sub>l</sub>CO  
CR<sub>6</sub>:CH<sub>2</sub> (R<sub>1</sub>-R<sub>6</sub> = H or C>1 lower alkyl group, m .gtoreq.1, n  
.gtoreq.0, n/m = 0-5, k .gtoreq.3, l .gtoreq.0, and l/k = 0-5)  
crosslinked by an org. compd. sol. for the ionic compd., and at  
least 1 of the **battery** part is formed by irradiation with an  
ionizing radiation beam.
- IC ICM H01M010-40  
ICS H01M004-02; H01M004-60
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST **battery** conductive crosslinked polyoxyalkylene acrylate
- IT **Batteries, secondary**  
(secondary **batteries** contg. ion conductive polymers)

- IT 7440-44-0, Carbon, uses 25104-32-9, Cyclopentadiene-ethylene-propylene copolymer  
(secondary **batteries anodes** contg. ion conductive polymers)
- IT 12190-79-3, **Lithium** cobalt oxide (LiCoO<sub>2</sub>) 25014-41-9, Polyacrylonitrile  
(secondary **batteries cathodes** contg. ion conductive polymers)
- IT 14283-07-9, **Lithium** fluoroborate 26570-48-9, Polyethylene glycol diacrylate **32171-39-4**  
(secondary **batteries** contg. ion conductive polymers)

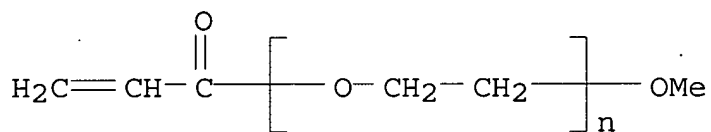
L71 ANSWER 25 OF 28 HCA COPYRIGHT 2003 ACS on STN  
121:283576 Ion conductive polymer **batteries** and their manufacture. Takeda, Kazunari; Izuchi, Syuichi (Yuasa Corporation, Japan). PCT Int. Appl. WO 9419840 A1 **19940901**, 67 pp.  
DESIGNATED STATES: W: CA, JP, US; RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2.  
APPLICATION: WO 1994-JP246 19940218. PRIORITY: JP 1993-59631 19930223; JP 1993-62994 19930225; JP 1993-75262 19930308; JP 1993-75263 19930308.

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- AB The **batteries** use ion conductive polymer **cathodes**, ion conductive electrolyte, and **anodes** which may also contain an ion conductive polymer; where the concn. of SO<sub>4</sub><sup>2-</sup>, p-toluenesulfonate ion, Cl<sup>-</sup>, PEG, acrylic acid and/or methacrylic acid, left from the manuf. of the polymer, in the **batteries** is controlled at <0.1 wt.%. A 2nd type Li<sup>+</sup> conductive **batteries** contain <0.1 wt.% alkali metal ions other than Li<sup>+</sup> and multivalent metal ions, and a 3rd type **batteries** contain <0.1 wt.% radical capturing agents. The ion conductive polymer are the polymn. product of I (R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> = H or C>1 lower alkyl group, m .gtoreq.1, n .gtoreq.0, and n/m = 0-5) and/or II (R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> = H or C>1 lower alkyl group, s .gtoreq.3, t .gtoreq.0, and t/s = 0-5) in the presence of .gtoreq.1 ionic compd.; the metal ions may Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, Fe<sup>2+</sup>, Cu<sup>2+</sup>, Ni<sup>3+</sup>, Fe<sup>3+</sup>, Co<sup>3+</sup>, or Cr<sup>3+</sup>; and the radical capturing agent is selected from III (R<sub>11</sub> = C>1 alkyl, alkoxyl, or OH group), IV (R<sub>12</sub> = C>1 alkyl, alkoxyl, or OH group), V (R<sub>13</sub> = C>1 alkyl, alkoxyl, or OH group), and VI (R<sub>14</sub>, R<sub>15</sub>, R<sub>16</sub> = C>1 alkyl, alkoxyl, or OH group). These **batteries** have high capacity and low internal impedance.
- IT 32171-39-4  
(**batteries** with **electrodes** and electrolytes contg. ion conductive polymers and their manuf.)
- RN 32171-39-4 HCA
- CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



- IC ICM H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST **battery** ion conductive polymer **electrode**;  
electrolyte ion conductive polymer **battery**
- IT **Batteries**, secondary  
(ion conductive polymer **batteries** with suppressed content of impurities from polymer manuf.)
- IT 7791-03-9, **Lithium** perchlorate 12190-79-3,  
**Lithium** cobalt oxide (LiCoO<sub>2</sub>) 26570-48-9, Polyoxyethylene diacrylate 32171-39-4  
(**batteries** with **electrodes** and electrolytes contg. ion conductive polymers and their manuf.)
- IT 1313-13-9, Manganese dioxide, uses  
(**cathodes**; **batteries** with **electrodes** and electrolytes contg. ion conductive polymers and their manuf.)
- IT 79-10-7, Acrylic acid, miscellaneous 14127-61-8, Calcium ion, miscellaneous 14701-22-5, Nickel ion, miscellaneous 14808-79-8, Sulfate, miscellaneous 15438-31-0, Iron ion (Fe<sup>2+</sup>), miscellaneous

16065-83-1, Chromium ion (Cr<sup>3+</sup>), miscellaneous 16722-51-3,  
p-Toluenesulfonate, miscellaneous 16887-00-6, Chloride,  
miscellaneous 17341-25-2, Sodium ion, miscellaneous 20074-52-6,  
Iron ion (Fe<sup>3+</sup>), miscellaneous 22541-53-3, Cobalt ion,  
miscellaneous 24203-36-9, Potassium ion, miscellaneous  
25322-68-3, Polyoxyethylene

(impurity; ion conductive polymer **batteries** with  
suppressed content of impurities from polymer manuf.)

IT 128-37-0, 2,6-Di-tert-butyl-4-methyl phenol, uses 150-76-5,  
4-Methoxyphenol

(radical capturing agent; ion conductive polymer  
**batteries** with suppressed content of impurities from  
polymer manuf.)

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119:184798 Secondary **batteries** with polymer electrolytes.

Takeda, Kazunari; Noda, Tomohiko; Izuchi, Syuichi; Inamasu, Tokuo  
(Yuasa Corp., Japan). PCT Int. Appl. WO 9314528 A1 19930722  
, 32 pp. DESIGNATED STATES: W: CA, JP, US; RW: AT, BE, CH, DE, DK,  
ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN:  
PIXXD2. APPLICATION: WO 1993-JP40 19930114. PRIORITY: JP  
1992-27417 19920117.

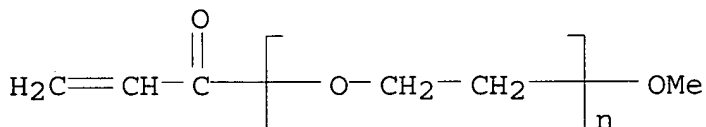
AB The **batteries** use an ion-conductive polymer electrolyte  
contg. .gtoreq.1 dissolved ionic compds. and **cathodes** and  
**anodes** contg. the electrolyte, where the polymer is  
crosslinked product of RO<sub>1</sub>(CH<sub>2</sub>CH<sub>2</sub>O)<sub>m</sub>(CH<sub>2</sub>CR<sub>2</sub>HO)<sub>n</sub>COCR<sub>3</sub>:CH<sub>2</sub> (R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>  
= H or C>1 lower alkyl group, m .gtoreq.1, n .gtoreq.1, n/m = 0-5)  
or CH<sub>2</sub>:CR<sub>1</sub>COO(CH<sub>2</sub>CH<sub>2</sub>O)<sub>5</sub>(CH<sub>2</sub>CR<sub>2</sub>HO)<sub>t</sub>COCR<sub>3</sub>:CH<sub>2</sub> (S .gtoreq. 3, t .gtoreq.  
0, t/s = 0-5).

IT 32171-39-4

(crosslinked, electrolytes contg. **lithium** salts and  
org. solvents and, for secondary **batteries** and, for  
secondary **batteries**)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-  
(9CI) (CA INDEX NAME)



IC ICM H01M010-40

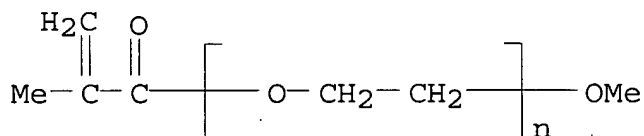
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST **battery** polyether solid electrolyte; ethylene oxide  
polymer **battery** electrolyte; propylene oxide polymer  
**battery** electrolyte

IT **Battery** electrolytes

(solid, crosslinked PEO acrylate-**lithium**  
fluoroborate-org. solvent)

- IT **Anodes**  
(**battery**, carbon, **lithium**-intercalating, contg. solid polymer electrolytes)
- IT **Cathodes**  
(**battery**, **lithium** cobalt oxide, contg. solid polymer electrolytes, for secondary **batteries**)
- IT 12190-79-3  
(**cathodes**, contg. solid polymer electrolytes, for secondary **batteries**)
- IT 26570-48-9 32171-39-4  
(crosslinked, electrolytes contg. **lithium** salts and org. solvents and, for secondary **batteries** and, for secondary **batteries**)
- IT 96-48-0, .gamma.-Butyrolactone 110-71-4  
(electrolytes contg. crosslinked PEO acrylates and **lithium** salts and, for secondary **batteries**)
- IT 96-48-0, .gamma.-Butyrolactone 110-71-4  
(electrolytes contg. crosslinked PEO acrylates and **lithium** salts and, for secondary **batteries**)
- L71 ANSWER 27 OF 28 HCA COPYRIGHT 2003 ACS on STN  
117:154527 Composite **anodes** for secondary **batteries**.  
Miyabayashi, Mitsutaka; Mizutani, Bunichi; Hayashi, Manabu  
(Mitsubishi Petrochemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho  
JP 04141953 A2 19920515 Heisei, 13 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1990-260487 19901001.
- AB The **anodes** have an alkali metal loaded on a substrate comprising an alkali metal ion-conductive polymer and a carbonaceous material having H/C at. ratio .ltoreq.0.15, interplanar spacing d002 .gtoreq.3.37 .ANG., and unit-cell length Lc .ltoreq.220 .ANG. by elec. contacting the metal with the substrate. **Li anodes** with substrates contg. pyrolyzed cellulose, 1,3-(p-methoxycarbonylbenzylidene)-2,4-benzylidene sorbitol, and LiClO4-polyethylene glycol methyl ether methacrylate were prepd.
- IT 26915-72-0  
(**anodes** with substrates contg. pyrolytic carbon and **lithium** perchlorate and, **lithium**, for **batteries**)
- RN 26915-72-0 HCA  
CN Poly(oxy-1,2-ethanediyl), .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-methoxy- (9CI) (CA INDEX NAME)



- IC ICM H01M004-02  
ICS H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

- ST **battery lithium anode** polymer carbon;  
**lithium anode** pyrolytic carbon polymer; sorbitol  
carbon polymer **lithium anode**;  
methoxypolyethylene glycol methacrylate **lithium  
anode**
- IT Phosphazene polymers  
(**anodes** with substrates contg. pyrolytic carbon and  
**lithium perchlorate** and, **lithium**, for  
**batteries**)
- IT **Anodes**  
(**battery**, **lithium**, substrates for, contg.  
pyrolytic carbon and ion-conductive polymers)
- IT 9004-34-6D, Cellulose, pyrolyzed  
(**anodes** with substrates contg. ion-conductive polymers  
and, **lithium**, for **batteries**)
- IT 126748-38-7, 1,3-(p-Methoxycarbonylbenzylidene)-2,4-  
benzylidenesorbitol  
(**anodes** with substrates contg. pyrolytic carbon and  
ion-conductive polymers and, **lithium**, for  
**batteries**)
- IT 26915-72-0  
(**anodes** with substrates contg. pyrolytic carbon and  
**lithium perchlorate** and, **lithium**, for  
**batteries**)
- IT 7791-03-9, **Lithium perchlorate**  
(**anodes** with substrates contg. pyrolytic carbon and  
polymers and, **lithium**, for **batteries**)
- IT 7439-93-2, **Lithium**, uses  
(**anodes**, with substrates contg. pyrolytic carbon and  
ion-conductive polymers, for **batteries**)
- IT 7439-93-2, **Lithium**, uses  
(**anodes**, with substrates contg. pyrolytic carbon and  
ion-conductive polymers, for **batteries**)

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110:61079 **Batteries** with polymer-containing ion-conductive  
materials. Uemiya, Takafumi; Shibata, Yutaka (Sumitomo Electric  
Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63170857 A2  
19880714 Showa, 10 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1987-2082 19870107.

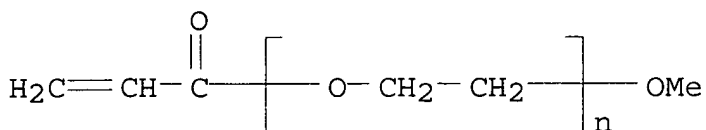
AB **Batteries** have **anodes** and **cathode**  
sepd. by an ion-conductive material contg. an electrolyte having  
Group I or II metal ions and a crosslinked polysiloxane having side  
chains contg. oxyalkylene or polyoxyalkylene groups. The  
oxyalkylene or polyoxyalkylene groups are  $(CH_2CH_2O)_n$ , and the  
crosslinking is formed by an addn. reaction of an org. compd. having  
.gtoreq.2 unsatns. to the Si-H groups of the polysiloxane backbone.  
Thus, poly(methylhydrogensiloxane) was reacted with ethylene glycol  
allyl Me ether and ethylene glycol diallyl ether, mixed with a 10%  
LiClO<sub>4</sub> soln. in THF, and dried in vacuum at 90.degree. for 30 days  
to obtain a conductive film having ion cond. of 10<sup>-4</sup> and 3.0 .times.  
10<sup>-4</sup> S/cm at 30 and 50.degree., resp. A Li

**battery** using this film as a separator and a **cathode** prepd. from a mixt. contg. an ion-conductive material having the same compn. as the film 9.4, graphite fluoride 46.7, and C 43.9% had a high and stable output voltage and did not have leaking problems during long-time discharging as control **batteries**.

IT 32171-39-4D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes  
(electrolytes from **lithium** perchlorate and, for **batteries**)

RN 32171-39-4 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.-(1-oxo-2-propenyl)-.omega.-methoxy-(9CI) (CA INDEX NAME)



IC ICM H01M006-18

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

ST **lithium battery** polysiloxane electrolyte;  
polysiloxane crosslinked **lithium** perchlorate electrolyte

IT **Batteries**, primary

**Batteries**, secondary

(electrolytes for, from **lithium** perchlorate and crosslinked siloxanes contg. (poly)oxyalkylene side chains)

IT Siloxanes and Silicones, uses and miscellaneous  
(Me hydrogen, crosslinked, contg. (poly)oxyalkylene side chains, electrolytes from **lithium** perchlorate and, for **batteries**)

IT Siloxanes and Silicones, uses and miscellaneous  
(Me vinyl, crosslinked, contg. (poly)oxyalkylene side chains, electrolytes from **lithium** perchlorate and, for **batteries**)

IT Siloxanes and Silicones, uses and miscellaneous  
(di-Me, crosslinked, contg. (poly)oxyalkylene side chains, electrolytes from **lithium** perchlorate and, for **batteries**)

IT 7791-03-9, **Lithium** perchlorate

(electrolytes from crosslinked siloxanes contg. (poly)oxyalkylene side chains and, for **batteries**)

IT 17831-71-9D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 18854-48-3D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 19685-21-3D, 2,5,8,11-Tetraoxatetradec-13-ene, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 26570-48-9D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 27252-80-8D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 32171-39-4D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 58185-54-9D,

4,7,10,13,16-Pentaoxanonadeca-1,18-diene, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 79313-21-6D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 93066-80-9D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 112755-35-8D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes 112756-56-6D, reaction products with unsatd. poly(ethylene oxide) derivs. and siloxanes  
(electrolytes from **lithium** perchlorate and, for **batteries**)